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Editor

Dr. Rina Poonia
Dr. Bhavana Arya
Dr. Gaganendu Dash

Manipal University Jaipur, Dehmi Kalan, Jaipur-Ajmer Expressway, Jaipur, Rajasthan-303007

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Dr. Rina Poonia
Director Sports & HoD Physical Education, Manipal University Jaipur

Dr. Bhavana Arya
Associate Professor, Manipal University Jaipur

Dr. Gaganendu Dash
Director General School of Sports and Yogic Sciences
KIIT - Deemed to be University & KISS

KHEL SAHITYA KENDRA
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New Delhi – 110002

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ROLE AND REQUIREMNET OF NUTRITION FOR COMBATIVE SPORTS

Saurya Milan, MPEd. Student,
Central University of South Bihar, Gaya
milansaurya99@gmail.com
Dr. Usha Tiwari, Associate Professor,
Department of Physical Education Central University of South Bihar, Gaya
ushatiwari@cusb.ac.in
Dr. Rahul Singh, Assistant Professor,
Department of Physical Education Central University of South Bihar, Gaya
rahulsingh@cusb.ac.in

ABSTRACT

In today's world nutrition plays a key role in the enhancement of performance, health and recovery of the athletes of any sports or games. Using a appropriate diet plan is a proven method to enhancing athletes performance. As combat sports is a major popular game in this modern world. Combat sports are the sports where two opponent fights against each other according to their body mass under the certain contest rules. Some of most popular combat sports are wrestling, mixed martial arts, karate, wushu, judo, boxing, taekwondo. As these combat sports classified as high intensity sports where strength, flexibility, endurance, body size, agility plays a major role. From optimal body composition to well-timed acute weight loss strategies to "make weight", nutrition plays a key role in the training of a combat sports athlete .The aim of this study is to show the role of nutrition in the enhancement of performance of the athletes of combat sports, the nutritional requirement of the athletes of combat sports at the different level of the competition.

Keywords – Combat sports, nutrition, performance, body composition.

INTRODUCTION

Nutrition is basically the process of the taking in food, converting it into energy and other nutrient required for life. It is very important part of health and development for living organisms. Better nutrition is related better physical and mental health. Strong immune system , lower risk of diseases , better life span .the nutrients which are the source of energy for our body are classified as – carbohydrates , fats , protein , fibre , minerals , vitamins , water .

Sports nutrition is the field of nutrition which deals with the nutritional need of the athletes or individual engaged in any physical activity and exercises. Sports nutrition enhances athletic performance supports recovery, and maintains overall health.

Combat sports, or fighting sports is a competitive contact sports in which two opponent go on one on one against each other according to their event and body mass under the certain contest rules. In many combat sports, a contestent wins by either scoring a higher score from its opponent or by knocking out its opponent. Some of most popular combat sports are wrestling, mixed martial arts, muay thai, karate, wushu, judo, boxing, taekwondo. As these combat sports classified

as high intensity sports where strength, flexibility, endurance, body size, agility plays a major role. From optimal body composition to well-timed acute weight loss strategies to "make weight", nutrition plays a key role in the training of a combat sports athletes.

ROLE OF NUTRITION FOR COMBAT SPORTS

As combat sports are high intensity sports nutritional requirement of the athletes are much higher for peak performance, proper recovery, less risk of injury , better health etc. Below is the aspects the role of nutrition for combat athletes.

Energy Requirements:

Combat sports are high intensity sports requires high amount of energy during training and competitions. Athletes need to consume an appropriate amount of calories during workouts and matches. The balance between calorie intake and consumption is essential for maintaining weight and energy levels. The calorie intake for combat athletes may be 40-70 kcals/kg/day depending on the intensity on their individual training session and for elite players the calorie may be further exceeds. The source of energy for athletes are through nutrients through food they consume and nutrients can be classified as macronutrients and micronutrients.

Macronutrients

Macronutrients include carbohydrates, proteins and fats which provide energy to our body. Combat athletes must have a good amount and variety in their diet.

Carbohydrates: Carbohydrates Are The Primary Source Of Energy. Athletes Need To Ensure They Have Enough Carbohydrates To Support Both Training And Competition. The recommended intake of carbohydrates in an athletes' diet should vary between 4–5 g/kg to 8–10 g/kg of body mass and in high intensity sports, such as combat sports, the intake of carbohydrates may gain 10–12 g/kg of body mass daily

Proteins: Protein Is Crucial For Muscle Repair And Recovery. Combat Athletes Often Require Slightly Higher Protein Intake To Support Muscle Growth And Repair, Especially After Intense Training Sessions. Athletes should aim to consume between 1.4 - 2g of protein per kg of body weight a day for optimal recovery and performance.

Fats: Healthy Fats Provide A Source Of Energy And Support Overall Health. Omega-3 Fatty Acids, In Particular, May Help Reduce Inflammation And Support Joint Health. The recommended level of fat in athletes' diet is 25–30% of energy intake.

Micronutrients

Combat Athletes Should Ensure They Get An Adequate Intake Of Vitamins And Minerals To Support Various Bodily Functions, Including Immune System Health. This Can Be Achieved Through A Well-Balanced Diet Or, If Necessary, Supplements.

Hydration:

Proper amount of hydration is very important for combat athletes. As water is excreted from our body in multiple form through urine, dung, sweat and by water vapour during exhalation. Therefore, it is necessary to rehydrate. Dehydration can lead to decreased performance, lack of concentration, dizziness, and increased risk of injury. Athletes should maintain proper fluid balance, especially when training intensely or in hot conditions.

Weight management:

Combat sports competitions have different weight categories in which athletes do one on one combat according to their categories. Proper diet helps to make weight safely and maintain the Athletes weight for their required competition weight class. Many athletes cut down their weight before the competition and sometimes goes to extreme weight cutting which lead to decrease in their performance and health so a proper diet is important for maintaining the required weight class.

Pre-Competition Nutrition:

Before the competition the athlete must have a well-planned pre-competition meal ready to fulfil their energy requirement during the game. The meal should be consumed 2-3 hours before competition and which consist of digestible carbohydrate and balanced amount of protein.

Post-Competition Nutrition:

After a training session or competition a post competition meal must have which is essential in recovery. Consuming a combination of carbohydrates and protein helps replenish glycogen stores and repair muscle tissue. Proper post-competition nutrition also reduce the risk of overtraining and injuries.

Recovery:

Nutrition plays a significant role in recovery. Athletes should focus on both immediate post-exercise nutrition and long-term recovery strategies to minimize muscle soreness, fatigue, and the risk of injuries.

Supplements:

Supplements are used to provide essential nutrients, vitamins, minerals, and other compounds that may be lacking in a person's diet or to address specific health or performance goals. As supplements should not replace a balanced diet, some combat athletes may benefit from specific supplements such as branched-chain amino acids (bcaas), caffeine and creatine etc, which can support muscle recovery and explosive power.

A CHART OF SUPPLEMENTS CONSIDERED FOR COMBAT ATHLETE ON THE SCIENTIFIC BASIS WITH THEIR DOSAGE

Supplement	Dosage	Scientific rationale
Protein powder	As needed	Completing protein intake
Creatine	50 mg/kg bodyweight for 6 weeks	Energy homeostasis Neuroprotection
Omega3 fatty acids	1g DHA + EPA per day	Antiinflammatory, injury recovery

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Supplement	Dosage	Scientific rationale
Caffeine	200–400 mg 20–40 min before workout	Focus, performance, exercise tolerance
BCAA	1g per kg 30–45 min before workout	Anticatabolic, fatigue managing
Vitamin C	500–1000 mg per day in separate doses	Antioxidant, collagen synthesis, immune system support, injury recovery
Vitamin D	1000–2000IU daily	Immune system support, steroidogenesis
Nitrates	50–70 mg 1–2 h before work out	Oxigen transport, vascularization, injury recovery

Foods combat athletes SHOULD EAT

ATHLETES MUST HAVE A BALANCED DIET INCLUDING:

- Lean proteins, like fish, eggs, nuts & seeds
- Lean meats
- Carbohydrates, like whole grains, lots of veggies
- Fruits
- Healthy fats, such as healthy oils and avocados.

Some dos and don't for combat athletes

- Athletes must maintain their ideal weight according to their sport and plan their food intake according to the need of the sport.
- Protein is very essential nutrients for muscle building, so sufficient amount of protein is much have in their diet. But is it not good to avoid carbs and fats altogether in a meal as these are essential nutrients for body.
- Do not follow fag diet as these can affect your health and performance in long run.
- Always use supplements with consulting a certified sports nutritionist. As there are many supplements which are prohibit to use by sports authorities and some may cause harm to health.
- Always consult a professional sports nutritionist to plan your diet as each and every athlete have individual need of diet according to body need. This plan should include meals, frequency of intake, micronutrient planning, vitamin and mineral intake, and sports supplements.
- Don't over intake caffeine as it can you more alert but can also cause dehydration and slow down healing.

- Eating too heavy or having a meal too soon before a training session leads too nausea, cramps, indigestion, and overall decreased performance. Aim to have a meal at least an hour before session containing a balance diet of carbs, fats, proteins.
- Stop using of sports drinks as mostly of them contains high amount of sugar levels. Weight gain is a result of high-sugar foods, and no athletes should slow down their pace with unnecessary body fat.
- Spicy foods, fatty foods, junk foods must be avoid by the athletes.
- Avoid use of alcohol as, alcohol affects your motor skills and coordination, putting you at risk for injury. It also leads to dehydration." You're better off enjoying yourself at happy hour and fitting in a workout the following morning.
- Stay away from processed foods as these contains unnecessary fats, sugar, sodium which can affects Athletes health and performance.

Conclusion

Nutrition is essential for the combat athletes for the enhance of their performance, improve body composition, helps in faster recovery. A proper diet containing all the macronutrients and micronutrients must be followed by the athletes. The Primary Source of Energy are Carbohydrates. Fluids are very important for maintaining hydration and should be consumed before, during and after athletic events to prevent dehydration. Timing of food consumption is important to optimize performance. Athletes Need To Ensure They Have Enough Carbohydrates To Support Both Training And Competition. There are some supplements which have a proven influence on strength, endurance and body composition in combat sports such as caffeine, creatine, protein supplements. Therefore, nutrition plays a very important role for combat athletes.

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HEALTH IMPACT OF YOGA IN IMPROVING THE QUALITY OF LIFE

Mr. Deepak Kumar,
Student Master in yoga therapy Central University of Rajasthan
deepakkumar824240@gmail.com
Dr. Usha Tiwari Associate Professor,
Head, Department of Physical Education, Central University of South Bihar, Gaya
usha4tiwari@gmail.com
Mr. Rajnish Kumar,
Student Master in yoga therapy Central University of Rajasthan
mandal7867@gmail.com, rajraviprakash7@gmail.com
Mr. Kamakhaya Narayan,
Student Master in yoga therapy Central University of Rajasthan
kamakhaya.rathore@gmail.com
Dr. Dhirendra Tiwari,
Assistant Director (BHU)Varanasi, (U.P.)
dr.dhirendratiwari@gmail.com

ABSTRACT:

Pranayama is the inhalation and exhalation of Prana Shakti, or the energy connected to Prana. The regulation of breathing might lead to this pranashakti. There are some Both voluntary and involuntary bodily functions exist.It is often known that pranayama has favourable health advantages. While numerous research have been conducted on the efficacy of pranayama, surprisingly few have thoroughly examined the physiological mechanisms underlying the advantages of pranayama, particularly in relation to heart function.The goal of this essay is to examine the physiology of deep breathing in detail. Additionally, the essay makes the assumption that conscious, deliberate, deep breathing may contribute to a quicker recovery from surgeries, andpossibly even cancer. Extensive, carefully monitored research is required to validate or refute these theories.

Key words: Oxygen, carbon dioxide, Ph, chemoreceptors, wound healing, respiratory sinus arrhythmia, cancer, Parkinson's disease, Alzheimer's disease, CSF, and vital capacity.

INTRODUCTION

Indian customs have historically praised the use of various forms of deep breathing exercises, or pranayama, to improve one's own health. Numerous studies have demonstrated that various forms of pranayama practise lower blood pressure and heart rate.But few have examined the ways in which deep breathing affects all of the physiological functions that lead to good health, particularly heart health.

We have thoroughly examined the respiratory physiology and the cardio-respiratory control circuits in this paper, and we offer potential explanations for how deep breathing can improve

cardiac health.We also show that deep, conscious breathing that is voluntary is a very beneficial cardiac exercise.

THE MUSCLES USED FOR BREATHING

The diaphragm is the primary muscle involved in breathing.

The scalene, sternomastoid, internal intercostals, external intercostals, and abdominal muscles a re additional

Muscles involved in breathing.

PharyngulThe diaphragm contracts during a calm, deliberate inhale, bringing in air and reducin g lung pressure.Quiet exhalation causes the diaphragm to relax and the pressure to reverse, allo wing air to be expelled.

Intercostals external

In the space between the ribs are the external intercostals.They cause the rib cage to extend later ally, anteriorly, and posteriorly during active inhaling.

Sternomastoid/Scalene

These muscles are used for shrugging.During active inhalation, they help to elevate the upper ri bs and the sternum.

Stomach wall

The rectus abdominis, internal and external obliques, and transverse abdominis muscles of the abdominal wall contract during active exhalation, increasing abdominal pressure. As a result, the diaphragm rises, increasing lung pressure and causing air to be expelled.

Internal Dividends: Deep to the exterior intercostals are the interior intercostals. Similar to their cousins, during active exhalation, they draw in the ribs and release air.

(DIAPHRAGM BREATHING) VERTICAL BREATHING

Diaphragmatic breathing, which is done vertically, is thought to be a more effective method of breathing in air. Another name for it is Yogic breathing. Yogic breathing is mostly vertical in nature as opposed to horizontal. All of the alveoli, or the functional units of the lungs, in both lungs open up uniformly during this vertical breathing. A large area of the alveolar membrane is open to gas exchange because every alveoli has expanded uniformly.

A mature human's two lungs contain around 700 million alveoli in total. Particularly noticeable is this effect in the middle, basal, and apical alveoli. This surface is 20 times larger than the total surface area of the body, measuring roughly 50 square metres. The breathing process would be better with a bigger surface area accessible for the diffusion process.

HORIZONTAL VENTILATION

When breathing horizontally, the alveoli in the periphery expand more than is ideal, but the alveoli in the center do not open up properly. This provides a smaller, irregular surface for gas diffusion. Some alveoli become stuck if they don't open. They are prone to the formation of diseases and contain a collection of secretions. Furthermore, the peripheral alveoli lose their flexibility if they expand wider than is ideal.

Broken interalveolar walls, which divide and link two adjacent lung alveoli, can harm capillaries and result in conditions like pulmonale or emphysema. (The tiniest blood arteries are called

capillaries. They function to provide the body's tissues with oxygenated blood from the arteries and return the tissues' deoxygenated blood to the veins.

Neural regulation of the breathing muscles:

Of the 31 pairs of spinal nerves altogether, 18 pairs—5 cervical, 12 thoracic, and 1 lumbar—control these muscles! The diaphragm is governed by C3 to C5, and the three pairs of cervical nerves from C1 to C3 govern the accessory muscles. The eleven pairs of the external, internal, and deepest intercostal muscles are contracted by the eleven pairs of thoracic nerves T1 to T11.The lumbar nerve L1 and the thoracic nerves T6 to T12 innervate the abdominal muscles. The necessity of ventilation for breathing is evident from the fact that 36 spinal nerves are involved in breathing.

LUNG CAPACITIES AND LUNG VOLUMES:

- The greatest volume of air that can fill the lungs is known as the total lung capacity (TLC), which is approximately 6,000 ml (TLC = TV + IRV + ERV + RV).
- After fully inhaling, the entire volume of air that can be exhaled is known as the vital capacity (VC), which is around 4,800 ml (VC = TV + IRV + ERV = roughly 80% TLC).
- The maximum volume of air that may be inspired is known as the inspiratory capacity (IC), which is approximately 3,600 ml (IC = TV + IRV).
- After a typical expiration, the amount of air in the lungs that remains is known as the functional residual capacity (FRC), or roughly 2,400 ml (FRC = RV + ERV).
- About 150 millilitres of air in the lungs are not used for gas exchange. This type of air is found outside of the alveoli in the anatomical dead space found inside bronchi and bronchioles. A spirometer is a device that measures the amount of air that is inspired and exhaled by the lungs.

It is possible to boost the tidal volume to the crucial capacity by 900%!

The volume of air displaced between inhalation and exhalation during normal (involuntary, passive) breathing is approximately 500 mL to 7 mL/kg of body mass for a healthy, young adult. This is known as the tidal volume. One can achieve the vital capacity, or the maximum volume of air that can enter and exit the lungs during a respiratory cycle, of roughly 4.8 litres per sweating by breathing deeply and exerting full effort.

Chemoreceptor, baroreceptor, and gland involvement:

Pure oxygen inhalation has been shown in research to lower heart rate. Because deep breathing naturally raises oxygen and lowers carbon dioxide levels in the blood, it also lowers heart rate and pumping force. This is because deep breathing triggers feedback to the cardiorespiratory control centre, which is housed in the brain stem's medulla oblongata and the aorta.By monitoring variations in the tension of the artery walls, the baroreceptors in the carotid sinus and the aortic arch are able to continuously detect changes in blood pressure. By regulating the release of adrenaline and thyroid hormones, the adrenal and thyroid glands can also alter blood pressure and heart rate. As a result, hormones, chemoreceptors, and baroreceptors are all involved in the

intricate feedback loop that underlies the entire process. Deep breathing is therefore a very beneficial heart exercise!

Yoga and the healing of wounds:

To heal, wounds require oxygen.The healing process and the tissue's ability to fend against infection depend on the constant delivery of oxygen to the tissue via microcirculation. A major element that can hinder the body's capacity to heal itself is inadequate oxygen supply to the injured region.Word wounds usually conjure images of cuts, falls, and mishaps.All surgeries, however, leave wounds that require time to heal.Therefore, the author conjectures that deep breathing may hasten the healing process following surgery.

Oxygen's role in cancer treatment:

Research by Nobel Prize-winning biochemist Dr. Otto Heinrich Warburg revealed that low oxygen environments are essentially necessary for cancer to thrive. According to his theory, cancer cells "live in conditions of extreme low oxygen, acidity, and hypoxia and obtain energy from sugars by fermenting them, just like yeast does." He concluded from this that cancer was induced by the extremely acidic and low oxygen circumstances. Therefore, the author hypothesises that cancer may be avoided or at least postponed when body cells have enough oxygen! In addition to one glioma model, hyperbaric oxygen has been demonstrated to have an antiangiogenic effect in two mammary tumor types.

Parkinson's disease treatment with pranayama

In Substantia Nerva Pars Compacta (SNc), dopaminergic neurons are lost as a result of Parkinson's disease [13]. NEUROS in the SNc are among the most delicate and energy-intensive types of neurons because of their anatomical and functional characteristics. It has been suggested that SN neurons' high metabolic requirements are the main cause of their deterioration [14].A fairly recent article [15] proposes that this process may be triggered by weak-excitotoxicity mediated by energy deprivation. The paper is based on computational modelling of basal ganglia. According to the author's speculation, frequent, deliberate deep breathing can boost the brain's oxygen supply, perhaps avoiding or postponing the beginning of Parkinson's disease. The body has sufficient systems for feedback and preferred supply to guarantee that the needs of structures requiring extra nutrition are addressed when the supply of nutrients is insufficient.

CONCLUSION:

In addition to potentially recruiting up to 89 muscles, 36 spinal neurons, a variety of peripheral and central chemoreceptors, volume receptors, and probably even the thyroid and adrenal glands (which release thyroid and adrenal hormones), active, deep pranayamic breathing is a very effective cardiorespiratory workout.Therefore, with continued pranayama practise, the heart's health improves and the heart rate and blood pressure are certain to drop.Regular deep breathing has the ability to supply adequate amounts and delay or stop the buildup of beta amyloids in the brain, hence preventing Parkinson's and Alzheimer's illnesses, if recent results of CSF flow modulation by respiration are validated.

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MEDITATION IN RELATION WITH PSYCHOLOGICAL WELL-BEING: A STUDY OF YOUNG ADULTS

Agrawal Anulipi[a*] and Charu Vyas[b]

a Ph.D. Student, Department of Psychology, Banasthali Vidyapith, Tonk, Rajasthan, 304022, India, agrawalanulipi92@gmail.com

b Professor, Department of Home-Science, Banasthali Vidyapith, Tonk, Rajasthan, 304022, India, charuvyas@banasthali.in

ABSTRACT

Meditation is a scientific technique of self-exploration: a system of self-transformation by self-observation. It is the technique to see things as they are, to see things in their true perspective and in their true nature. The objective of meditation is to purify the mind, and free it from misery by gradually eradicating the negativities within. Meditation helps us to maintain a balance between our mind and body and make us more productive and social. Meditation is important for our well-being and is closely related with experience of positive emotions. Psychological well-being is about lives going well. It is the combination of feeling good and functioning effectively. Studies have discovered that people with higher psychological well-being are more likely to live healthier and longer lives. They are also more likely to enjoy a better quality of life. Better psychological well-being also associated with fewer social problems. Objective of the study is to compare the level of meditation in relation with psychological well-being. A total of 50 young adults were considered. Ryff's Scale of Psychological Well-Being (PWB) 42 item version was used to evaluate the data. After analyzing the data, it was observed that meditation has a positive correction with psychological well-being in relation with young adults. This study would add vision in the available studies and it will be beneficial for all human beings.

Keywords: *Meditation, Psychological well-being, Young adults*

*Corresponding author, email: agrawalanulipi92@gmail.com

INTRODUCTION

The word meditation comes from the Latin word 'meditatio' which originally means physical or intellectual exercise. Then later years, it evolved into more specific meaning called 'contemplation'. Meditation is defined in numerous way. Webster's dictionary defines meditation as an 'act of spiritual contemplation'. It seems that in its wider modern usages, it denotes: self-experience, self-realization and in some religious traditions, a specific practice to achieve the discovery of the ultimate truth (Kokoszka,1990).

Most descriptions of meditation expressed in behavioral terms (cravel,1989), include the following components: (1) Relaxation, (2) concentration (3) altered state of awareness (4) suspension of logical thought processes, and (5) Maintenance of self-observing attitude.

Psychological well-being is about once happiness, life satisfaction and feeling of accomplishment. There are total six factor of measuring psychological well-being.

1. Self-acceptance- it includes positive attitude toward oneself and accepting our own weakness. 2. Environmental Mastery- it includes managing day to day task and make effective use of resources 3. Positive relationship with others- includes warm, trusting, satisfying relations with 4. Autonomy- it includes independent and self-determine. Evaluate self by personal standards. 5.Personal Growth- it includes feeling of continued development. Sees improvement in self and behavior over time. 6. Purpose in life- it includes goals and sense of directedness. And aim and objective for living.

Objective

To assess the level of meditation in relation with psychological well-being among young adults

Hypothesis

There will be a positive relationship with meditation in relation to psychological well-being among young adults

Methodology

Participants

The sample size in the present research was 50 young adults aged 18 to 39 years. Two categories were made for collecting the data. The 1st category was of those participants who were doing meditation from 3 or more years. 2nd category was of those participants who were not involved in any type of meditation.

Description of the research design

Purposive sampling technique was used for this research study. The present research considered meditation as an independent variable while psychological well-being was taken as a dependent variable.

Tool

Scale of Psychological Well-being (PWB)

The scale of psychological well-being which was developed by psychologist Carol D. Ryff (1989) measures a total of 42 items in which 6 aspects of wellbeing. Respondents rate likewise strongly agree, score 6 as well strongly disagree score 1. The test-retest reliability coefficient of RPWBS was found to be 0.82.

Procedure

Using the above mentioned measures, the scoring was done and the study was concluded.

Result

The data was analyzed after scoring, with the help of a numerical analysis tool (MS excel). The data was analyzed in order to find the level of psychological well- being and self-actualization in relation to meditation. For evaluation of the results mean, standard deviation (SD) and coefficient of variation (COV) was evaluated (Table 1).

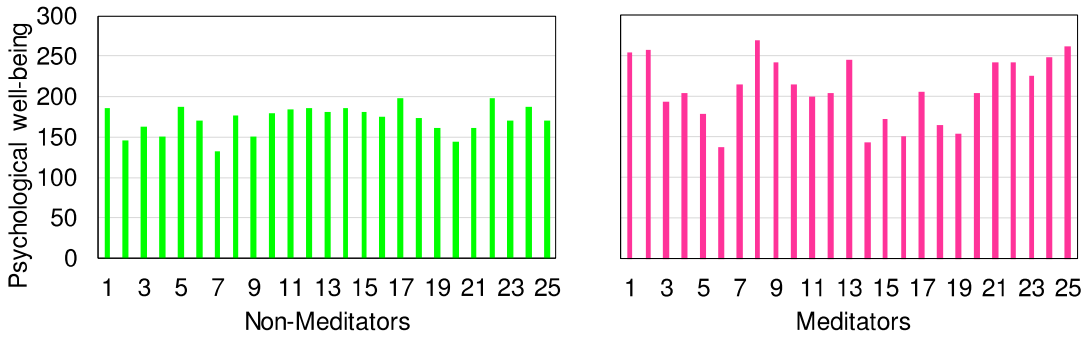
Discussion

The present study was planned to evaluate meditation in relation to psychological well-being among young adults. Meditators and Non-meditators both were taken in the part of research. Psychological well-being (PWB) Scale was used for collecting the data. Based on the study a

hypothesis was formed that a substantial variance in the levels of PWB could be observed between meditators and non-meditators, as given in Table 1. This hypothesis was tested and it was seen that a significant difference was found in both groups of meditators and non-meditators in relation to psychological well-being. A level difference in both the variables was observed between the meditators and non-meditators.

Table 1: Results of meditators and non-meditators for PWB

Years of meditation/ non-meditators	Mean	SD	COV
Non-meditators	171.92	17.301	10.063
3 or more than years of practicing	209.36	39.719	18.971



(a) (b)

Fig. 1: Statistical data of psychological well-being for (a) Non-meditators (b) Meditators (practicing 3 or more than years)

Table 1. reflects the mean, SD and COV for Ryff's Psychological Well-Being Scale. The maximum score for Ryff's Psychological Well-Being Scale is 252. Fig. 1 shows the statistical data for 25 participants in each group. Two categories were made in which 25 meditators in each group were taken. The score for PWB was obtained as 171.92 for the group who had no experience of meditation. Group who had acquired the meditation practice for 3 or more than years score for Psychological well-being was obtained as 209.36. It can be clearly seen in Table 1. that the participants who were practicing meditation scored higher on Psychological well-being scale when it compared to non-meditators. It may be clearly observed from the above mentioned results that meditation is important in enhancing the level of Psychological well-being in one's life.

Conclusion

The main objective of the research was to assess the level of meditation in relation with psychological well-being among young adults. A significant and positive relationship was found between meditation in relation with psychological well-being and poor correlation was obtained for the non-meditators. Participants who were practicing meditation scored higher as compared

to non-meditators. Besides this, it can also be concluded that those who were not practicing meditation the level of psychological well-being was significantly low.

Limitations

As per the literature, every study has some limitations in itself. The current study also comes up with some limitations which are stated as under:

1. In this research a small sample was used for collecting the data.
2. Merely young adults were taken in the research.
3. Quantitative method was used for collecting the data.

Implications

It would add valuable information about how meditation helps in a person's life. Study also tells about a positive relation in accordance with psychological well-being among young adults.

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IMPACT OF YOGA

Mr. Rajnish Kumar **Dr. Usha TiwariMr. Deepak Kumar **** Mr. Kamakhaya Narayan *****Dr.DhirendraTiwari**

***Student Master in yoga therapy Central University of Rajasthan**
mandal7867@gmail.com, rajraviprakash7@gmail.com
****Associate Professor, Phy. Education Central University of South Bihar, Gaya**
usha4tiwari@gmail.com
*****Student Master in yoga therapy Central University of Rajasthan**
deepakkumar824240@gmail.com
******Student Master in yoga therapy Central University of Rajasthan**
kamakhaya.rathore@gmail.com
*****AssistantDirector(BHU)Varanasi,(U.P.)
dr.dhirendratiwari@gmail.com

ABSTRACT:
In the modern world, obesity is on the rise, and being overweight is causing health issues for a large number of people. But you don't have to go through the hassle and cost of getting surgery or resorting to other drastic methods in order to control your weight and enhance your health. Being in good physical and mental health can help you gain total control over your body. Yoga is a means to attain physical fitness. It has been demonstrated that yoga helps people manage their stress levels, which can enhance general health. Furthermore, meditation can be a very helpful tool for enhancing mental wellness. Reductions in anxiety, blood pressure, and enhancements in mood, resilience, and metabolic control are a few advantages.
Key words: Metabolic regulation, blood pressure, and mood.

INTRODUCTION

Increasing your daily exercise level is more crucial than ever in today's fast-paced world to maintain a healthy body weight and cardiovascular fitness. Being mentally strong is just as important to fitness as being physically fit. When the body and mind are in harmony, anyone can perform at their best. Yoga is a fantastic method to enhance both your mental and physical health. Yoga can help you manage stress, anxiety, and depression through poses that improve your strength, flexibility, coordination, and ability to focus. Incorporating resistance, anaerobic, and aerobic training into your fitness regimen will also help you strengthen your core. The best way to avoid and treat stress and stress-related diseases is through the holistic science of yoga (Peal, 2018). Yoga has a direct down-regulating influence on HPA axis reactions to stress, according to a number of studies. It is well known that yoga is effective at reducing stress (Kirkwood et al, 2005).

LITERATURERE VIEW

According to Bhole (1977), there are various forms of yoga, each with its own philosophy. The Yoga tradition includes Jnana Yoga (self-knowledge), Bhakti Yoga (faith in the highest order),

Raja Yoga (asana, pranayama, meditation, etc.), and Karma Yoga (the path of detached action). He claimed that frequent practise of different forms of yoga can benefit your physical, mental, emotional, and spiritual health.

Combining the four forms of yoga—Karma, Bhakthi, Jnana, and Raja—yoga aids in the development of our entire self. We refer to this as Integrated Yoga. Yoga increases productivity and reduces stress at work, according to studies "Managerial effectiveness and quality of work life: Indian insights" (1987) and "Managerial Transformation by Values: A Corporate Piligrimate" Saga by Chakraborty SK.

A holistic and integrated yoga module, according to Chakraborty SK, consists of the teachings of Raja yoga (asanas, dhyana, pranayama, etc.), Jnana yoga (self-knowledge), Karma yoga (way of detached actions), and Bhakthi yoga (faith in the supreme order).

The study "A six-month randomised, controlled trial of yoga in healthy seniors: effects on cognition and quality of life" was published.By Barry S. Oken, Daniel Zajdel, Kristin Flegal, Shirley Kishiyama, Mitchell Has, Dale F. Kraemer, Julie Lawrence, Catherine Dehen, and Joanne Leyva focuses on how yoga affects seniors' mood, level of exhaustion, cognitive abilities, and general quality of life. 135 men and women in the 65–85 age range participated in the study, and over the course of six months, cognitive tests focusing on attentiveness and attention were administered.

This study, "Benefits, Barriers, and Cues to Action of Yoga Practise: a Focus Group Approach," written by Nancy L. Atkinson and Rachel M. Roth-Levine and published in the American Journal of Health Behaviour, examined focus groups of people who had never done yoga before and looked at the improvements that were noted.

The benefits of meditation on mental health and its impact on the body are examined in the study "Psychology of Meditation and Health: Present Status and Future Directions". It discusses how blood pressure, heart rate, brain activity, and other bodily functions can all be altered by meditation. It also covers how meditation might enhance cognitive functioning and how people see and think during meditation.

IMPACT OF YOGA:

Yoga's physiological effects include lowering blood lactate levels, reducing heart rate, reducing muscle tension, improving lung gas exchange, and lowering cortisol and adrenal levels. These processes are all brought on by the practise of yoga. This has several advantages, including as strengthening the immune system, raising energy levels, and improving strength.

Control of Blood Pressure: Physicians take a reading from your arm and compare it to typical ranges in order to normalise blood pressure. The doctors will try to lower your blood pressure if it is high by prescribing medication, changing your diet, or exercising.Pranayama and yoga can enhance the body's blood flow. which can aid in the treatment of both low and high blood pressure. Blood pressure can be lowered by reducing arterial stiffness and increasing artery flexibility by the stretching of the body's muscles and veins.Positive energy is created as a result, resulting in an enhanced and better living. By calming the nervous system, several asanas have the ability to lower heart rate and reduce the risk of a heart attack.

Mental health: Research has shown that enhanced focus, concentration, and mental clarity are among the benefits of weight gain.Additionally, it aids in lowering stress, anxiety, and

sadness.The sleep cycle is improved since the stress is decreased. Yoga improves feelings of wellbeing and self-image in daily life.

Body defence system Regular meditation practise benefits the brain by increasing the production of the happy neurotransmitter serotonin and decreasing the levels of the unfavourable neurotransmitter cortisol. This has detrimental effects on immune system health, elevated blood pressure and blood sugar, and cognitive abilities.

Knowledge of oneself: The ability to better comprehend oneself, achieve a certain level of tranquilly, and increase consciousness is among the most distinctive advantages of yoga. Even while some people find the spiritual parts of the practise enjoyable, the truth is that it has the ability to transform a person by helping them develop their personality.

Mindfulness: Meditation, often known as "mindfulness" to those in the West, is a technique that can improve cognitive abilities such as emotional intelligence, memory, and attention.

The ability to bounce back from adversity is known as resilience. In the face of difficulties, it can boost your self-assurance and optimism and reduce your likelihood of feeling overburdened or anxious.

Emotional Stability and Intelligence: Research indicates that meditation can lower anxiety levels and increase resiliency in stressful situations.This course teaches you how to become a more emotionally intelligent person. You'll get improved insight into and control over both your own and other people's emotions.It has been shown that by assisting the mind in taking charge of the body, meditation can improve your ability to regulate your emotions.Boost creativity: There are a few factors that can make you more creative, similar to being joyful or in a good mood.Researchers have shown that you are more likely to generate original thoughts when your mind is at ease. This is due to the fact that a calm mind is more open to considering many options. Divergent thinking, which is one of the essential conditions for creativity, is what this is.

Boost Relationship: Being more conscious of one's own thoughts and feelings and resisting the need to react on autopilot are two ways that mindfulness can enhance relationships. People's communication and trust can be strengthened as a result, strengthening relationships.

Induce focus: Stress causes people to concentrate on a small number of issues, which can hinder their ability to empathise with others. Their capacity to collaborate effectively and their relationships overall may suffer as a result.Enhancing your mood with meditation can help you become more focused and effective at work and in relationships.When you use medication to help you focus better, It might help you focus and remain on target more easily.We may think more clearly and with greater focus when we meditate. Our capacity for cognition and decision-making is also enhanced by it.

Feel more energised and have a good night's sleep: This medication makes you feel more energised and has a good night's sleep the following day.In addition to promoting sound sleep, meditation makes you feel more relaxed and energised during the day.

Feeling Good: secure and in control of your emotions is what it means to feel well. Being able to effectively control your emotions can help you be more adaptable and productive. You can regulate your neurological system by practising meditation, which can help you become more conscious of your emotions.

FINDINGS

According to the study, yoga can aid with a variety of health issues and disorders as well as preserve a sense of wellbeing. Because of this, it's a fantastic substitute for medical therapy when dealing with issues like stress, anxiety, depression, and other mood disorders.

CONCLUSION

Yoga and meditation can help you feel more at ease, confident, improve your body image, increase your efficiency, and build stronger relationships. Your perspective on life is improved by this.

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YOGA: A HEALING THERAPY

Mr. Kamakhaya Narayan, Student Master in yoga therapy Central University of Rajasthan
kamakhaya.rathore@gmail.com
Dr. Usha Tiwari Associate Professor, Head, Department of Physical Education, Central University of South Bihar, Gaya
usha4tiwari@gmail.com
Mr. Rajnish Kumar, Student Master in yoga therapy Central University of Rajasthan
mandal7867@gmail.com
rajraviprakash7@gmail.com
Mr. Deepak Kumar, Student Master in yoga therapy Central University of Rajasthan
deepakkumar824240@gmail.com
Dr. Dhirendra Tiwari, Assistant Director (BHU)Varanasi, (U.P.)
dr.dhirendratiwari@gmail.com Assistant Director (BHU)Varanasi,(U.P.)

ABSTRACT:

There has been an increase in the popularity of meditation in several Western countries, especially the USA. Numerous health benefits of meditation are being shown by an increasing amount of research, and this has the medical establishment interested. The meditation technique that originated in India is described in old Vedic writings from the Vedic era. One of the therapeutic modalities of Ayurveda (Science of Life), an all-natural healthcare system that dates back to pre-Vedic India, is meditation. These days, a wide range of activities are loosely referred to as "meditation" together. According to Vedic science, connecting with one's innermost Self is the true purpose of meditation. The neurological and physiological aspects of meditation have been investigated in the past, as have techniques that achieve that objective. This article provides a more fundamental description of the meditation process in order to shed light on the deeper underlying mechanism of the beneficial effects associated with it. An overview of the effects of meditation studies is given.

Key words: Ayurveda, consciousness, and meditation.

INTRODUCTION

Stress has an impact on family life and health. In life science, Hans Selye coined the term "stress" in 1936. The complex emotion known as the stress reaction results in physiological shifts to help us be ready, protect ourselves from the threat, or escape it. Workplace stress can result in ill health or even injuries (Sauter et al., 1999). Stress is a silent killer, and it can have a negative impact on a person's physical, psychological, and behavioural health over time. Stress has become a significant problem and is now at dangerously high levels. Stress can be counteracted by meditation.

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Types of meditation

There are many different kinds of meditation and relaxation methods that incorporate meditation.

Guided Meditation: in this form of meditation, one imagines mental images of locations or circumstances. This makes use of the senses of odours, sights, sounds, and textures. This kind of meditation may be guided by a teacher or guide.

Mindfulness meditation; Increased awareness and acceptance of living in the present moment are the foundations of mindfulness meditation. By becoming an observer, one is able to see his thoughts and feelings come and go without passing judgement.

Tai chi; One type of moderate Chinese martial arts is called tai chi. In this type of meditation, the practitioner practices deep breathing while moving slowly and gracefully through a sequence of postures or movements.

Transcendental meditation; The goal of transcendental meditation is to clear the mind of all thoughts and narrow conscious awareness by repeatedly using a word, sound, or phrase in silence. The mantra is the sole focus in order to reach the ultimate condition of consciousness and calm.

Yoga: A sequence of poses and deliberate breathing techniques are used to encourage mental clarity and physical flexibility.

ILLNESS AND MEDITATION-

Meditation may also be beneficial if you have a medical condition, particularly one that could be exacerbated by stress. While an increasing amount of scientific data indicates Some researchers believe it is still too early to make any strong conclusions about the health advantages of meditation. Given this, a number of studies suggest that meditation could help with a variety of ailments, including high blood pressure, allergies, anxiety disorders, asthma, binge eating, cancer, exhaustion, heart disease, and pain. Talk to your doctor about the advantages and disadvantages of meditation if you have any of these conditions or other health problems. There are situations when practising meditation exacerbates the symptoms of certain mental health issues.

Benefits of meditation: According to Drs. Gaurav Bissa and Amit Sharmain, meditation helps the body relax and concentrate the thoughts for a longer amount of time. By keeping the mind occupied and diverted from the stress-inducing issues, this relieves tension. hormonal. One effective and practical method of relaxation is meditation.

According to some research (Taylor, 1995; Carlson et al., 2003; Davidson et al., 2003; Ospina et al., 2007), meditation practices may have an effect on physiological pathways, such as the immune and neuroendo- crine systems, which are influenced by stress and are important in the onset and progression of disease.

Herbert Benson, a Harvard physician, stated in 1984 that transcendental meditation encourages the relaxation response, which makes the mind calm and concentrated. This method of meditation induces.

A variety of physiological and biochemical alterations in the body that can be combined to form the "relaxation response"; these include modifications to blood pressure, respiration, metabolism, heart rate, and brain chemistry. Those who possess a strong sense of humour can help people cope with stress (Abel, 2002).

Researchers Broome et al. (2005) found that those who meditated were better at maintaining equilibrium under stress than those who did not meditate. The study looked at the impact of the Transcendental Meditation (TM) approach on Progressive Muscle Relaxation (PMR).

One of the most effective strategies to lessen stress at work is to practise meditation. Employers such as IBM Corp., Medtronic Inc., and Shuster Laboratories Inc. provide its staff with on-site stress-reduction meditation programmes.

According to a study (Lazar et al., 2005), long-term meditation practitioners had thicker cortical regions related to attention and sensory processing than non-meditators. It also implies that regular meditation practise could counteract the effects of aging-related cortical thinning.

Generally speaking, meditation can promote emotional stability, general health, and a sense of quiet and peace. Furthermore, these advantages continue after the meditation session is over. A tranquil day can be achieved through meditation. Additionally, meditation may be helpful if you have a medical conditions, particularly those like allergies, anxiety disorders, asthma, depression, fatigue, heart disease, high blood pressure, pain, and sleep disturbances that can be made worse by stress.

Methods for Meditating

Observe your feelings and hearing as you take deep breaths in and out through your nose. Inhale slowly and deeply. Refocus your thoughts softly on your breathing whenever they wander.

Carry out a bodily scan. Use caution when using this technique to different body areas. Acknowledge the different bodily feelings you are feeling, including pain, tension, warmth, and relaxation. Breathe deeply and mindfully as you scan your body, imagining yourself inhaling and exhaling heat or relaxation in different places of your body.

Recite a mantra out loud. It is up to you to create your own mantra, spiritual or not. Instances Additionally beneficial might be meditation if you struggle with deep breathing. This method is appropriate for beginners because breathing is a natural function.

Focus just on your respiration. You have the freedom to create your own mantra, spiritual or not. The holy name of God in Judaism, the Jesus Prayer in Christianity, or the om mantra in Buddhism, Hinduism, and Examples of religious mantras are found in several Eastern religions.

Go for a stroll and think. Walking and meditation together is a useful and effective technique to relax. You may apply this strategy anywhere you're strolling, be it a quiet woodland, a metropolitan sidewalk, or a retail mall. When utilising this, pay attention. method, walk more

slowly, and offer up prayers on a daily basis. Prayer is the most popular and widely used type of meditation.

The majority of religious traditions include both written and vocal forms of prayer. You can choose to read other people's prayers aloud or recite your own out loud. Check out the self-help or 12-step recovery sections of your local bookstore for inspiration. Regarding accessible support networks, speak with your pastor, priest, rabbi, or other spiritual authority.

Study and reflect. Many people assert that there are benefits to reading poems or sacred texts and setting aside some time to reflect in private on their significance.You can also listen to spoken word, holy music, or any other kind of uplifting or peaceful music. Consider writing down your thoughts in a journal or discussing them with a friend or member of your family.

Focus on expressing your thanks and affection. During this kind of meditation, you focus your attention on a sacred item or being while letting love and gratitude permeate your thoughts. You can also look at images of the object or close your eyes and imagine it.

CONCLUSION:

In conclusion, meditation can help with stress management, emotional balance, life enhancement, efficiency, and spiritual fulfilment. It promotes mental alertness and attention, which leads to clear decision-making, and it aids in the balancing of body and mind. By strengthening the Assessment Centre, weakening the unhelpful aspects of the Ego Centre, strengthening the helpful parts of the Ego Centre (involved with empathy and understanding others), and altering the connections to and from the bodily sensation/fear centres, meditation is beneficial for physical health, illness, and possibly wellbeing. This allows one to experience sensations in a less reactive, more balanced, and holistic way. However, the decision still has to be made between the several meditation methods. Since no two people are same, there are differences in psychology amongst them. Therefore, the choice of technique depends on the individual. Meditation lowers anxiety, improves focus, and results in a peaceful state of mind. However, this state of mind should not just be experienced during the meditation session; it should also be maintained while engaging in regular, everyday activities.

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PHYSICAL EDUCATION TEACHER ROLE IN HEALTHY FOOD FOR CHILDHOOD

This study focuses on healthy food to prevent obesity. At present, children eat baked food in early age, it stores in body as fat and change into overweight or obesity. In this study talk to children about healthy food and unhealthy food with the help of 3d graph, also explain benefit of healthy food and effect of unhealthy food with fun of game. In this study PE teacher explain to the children about which is healthy food and unhealthy food.

Healthy food as like-
Green vegetables, grains, fruits, milk, dry fruits pulse
Unhealthy food as like –
Cake and biscuit, chips, burgers chocolates and sweets snacks, sugary drink

Eating time table for early childhood (2- 6years old)-
Average calories 75kcal/kg/day

DAY	Early morning	breakfast	Mid - morning	lunch	snacks	Dinner	Post dinner
Sunday	1 cup of milk with 1 tsp jaggery and 3-4 almond	Bread Omlet/ Daliya	Seasonal fruits/semolina pudding	Mixed vegetable rice: 1/2 cup, dal fry: 1/2 cup	Besan laddu: 1 Seasonable fruit cut piece	non veg \green veg (seasonable) with chapati-1	1 cup milk with 1 tsp. honey
Monday	1 cup of milk with 1 tsp jaggery and 3-4 almond	Veg Poha\ sprouts -1/2 cups	Idli with coconut chutney	Rice: ½ cup, bottle gourd dal: ½ cup, ghee: 1 tsp	Vegetable cutlet: 1 no., Lassi: ½ cup	Paratha-1 dal fry-½ cup with ghee: 1 tsp	1 cup milk with 1 tsp. honey
Tuesday	1 cup of milk with 1 tsp jaggery and 3-4 almond	Vegetable Rava Upma and seasonable fruit juice	Vegetables noodles\milk vermicelli	Rice: ½ cup, drumstick dal: ½ cup, ghee: 1 tsp, curd: ½ cup	Paneer sandwich -1and banana shake	Chapatti -1 no, ghee -1 tsp, Beetroot vegetable: ½ cup	1 cup milk with 1 tsp. honey

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Wednesday	1 cup of milk with 1 tsp jaggery and 3-4 almond	Oatmeal porridge with fruits & raisins-1/2 cup	Vegetable pasta: ½ cup Sprouts - 1/2 cups	Rice-½ cup, green gram dal-½ cup, ghee-1 tsp, curd-½, cup	Fruit salad 1 cup	Chapatti: 1, paneer and peas vegetable: ½ cup, ghee: 1 tsp	1 cup milk with 1 tsp. honey
Thursday	1 cup of milk with 1 tsp jaggery and 3-4 almond	NESTLÉ CEREGROW™ - 1 bowl	Veg. roll: 1, Dates 1-2	Rice - ½ cup, dal palak - ½ cup, ghee -1 tsp, curd: ½ cup	Ragi laddu -1 no, Banana - 1	Potato Peas paratha-1curd- ½ cup	1 cup milk with 1 tsp. honey
Friday	1 cup of milk with 1 tsp jaggery and 3-4 almond	Bread omlet/ sprouts	Veg sandwich& fruit	Rice: ½ cup, dal palak: ½ cup, ghee: 1 tsp, curd: ½ cup	Banana shake with mixed dry fruits -1 cup	Chapatti: 1 no, ghee: 1 tsp, Beetroot vegetable: ½ cup	1 cup milk with 1 tsp. honey
Saturday	1 cup of milk with 1 tsp jaggery and 3-4 almond	Boil egg -1and dosa 1\2	Utpam& Fruit salad	Vegetable Pulao: ½ cup, raita: ½ cup	Vegetable\non veg cutlet-1 no. Lassi ½ cup	Vegetable Kichadi: ½ cup, curd: 1/2 cup	1 cup milk with 1 tsp. honey

Later childhood diet plan (7-12years old)

Calories intake -1600-2200 cal per day

Day	Breakfast	Mid-Morning	Lunch	Snacks	Dinner
Sunday	Sprouts milk with jaggery	Fruit salad date 1-2	Rice and nonveg thali/ mixed vegetable pulao and chana dal	Vegetable cutlet-1 no. Lassi ½ cup	Potato Peas paratha-2 curd- 1 cup
Monday	Sprouts milk with jaggery	Veg sandwich -2 catcup-1	Seasonable veg with chapati-1 rice-½ cup	Banana shake with dry fruit	Rice: 1 cup, drumstick dal: ½

					cup, ghee: 1 tsp, curd: ½ cup
Tuesday	Sprouts milk with jaggery	Idli-3 with coconut chutney	Rice-1cup, dal-1 cup, and cabbage	Fruit salad-1 cup	Chapatti: 2, paneer and peas vegetable:
Wednesday	Sprouts milk with jaggery	Veg paratha with curd -1/2 cup	Egg curry-1 and rice	Biscuit-1 with milk	Seasonable veg with chapati -2 rice-½ cup
Thursday	Sprouts milk with jaggery	Seasonable veg bhujiya with chapati-2, date -1	Rice-1cup, mixed dal-1 cup, and paneer	Veg pasta -1 cup	Chapatti-2, ghee -1 tsp, Beetroot vegetable: ½ cup
Friday	Sprouts milk with jaggery	Veg sandwich -2 catchup-1	Rice: 1 cup, drumstick dal: ½ cup, ghee: 1 tsp, curd: ½ cup	Boil egg-1 pieces of fruit	Seasonable veg with chapati -2
Saturday	Sprouts/milk with jaggery	Poha -1 cup and Boil egg-1	Mixed veg khichadi	Banana shake with dry fruit	Egg curry -1 with rice -1 cup

The Role of Physical Education Teacher in Physical Activity For Childhood

The study has found that physical activity is associated with lower risks of accelerated weight gain and excess adiposity among preschool aged children. A study of 3-5years children attending preschool found that overweight children were significantly less active than normal weight children during the preschool day. Children spend more time with electronic devises like mobiles, watching TV, video game etc at home and in school with study making class work etc due to which they don't perform any physical activity. One of the major reasons to don't perform any activity is after school they attend tuition class. In this age (preschool age) children act imitation of their familiar person, so teacher should be always active and don't use mobile phone in front of them and teacher should conduct meeting with their parent and discuss about responsibility of them as like -parents always active and don't use mobile phones and watching tv in front of them and don't keep any types of electronic devise in their room they set limitation about it . In India, 73.9% children got "insufficient physical activity" in 2016, increasing their chances of being obese and developing heart disease, diabetes and mental health problems, including depression,

according to a World Health Organisation analysis of 1.6 million students across 146 countries. (Hindustan times).

In later childhood-in this age children had developed their gross motor activity, so teacher encourage and motivate to participate in game, dance, aerobics, yoga or any types of exercise activity.

Games for Early Childhood

Name of the game	Physical effect	Psychology effect	Mental effect
Tank fight	• Muscular strength • Cardiovascular endurance	• Personality development • Improve Self esteem	Improve cognitive level, co -ordination ability
Train game	Develop endurance		
Stair alphabet	Develop explosive strength Cardiorespiratory endurance		
Ball game	Improve strength,		
Run and peak the object	Improve speed, agility, and coordination		

For Later Childhood

Name of the game	Physical effect	Psychology effect	Psychology effect
Chain Game	Improvement of • Cardiovascular Endurance • Strength • Speed • Muscular endurance	• Personality development • Improve Self esteem	Improve cognitive level, co -ordination ability
Jump and reach			
Running with obstacles			
Ball game			
Fire on the mountain			
Run and touch			
Pitto			

CONCLUSION

One of the best ways that physical education teachers can be successful in teaching overweight or obese students is to meet their needs and interests. Proper diet in physical activity plays very important role to control childhood obesity. The role of physical education teacher is the most important for conduct a well structure physical activity schedule and provide a well plan diet chart to the parents and monitoring the students to follow the diet chart and engaging them in physical activity so that they can enjoy the activity with out of any undue fatigue and tiredness and lead a healthy success full life.

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THE INFLUENCE OF MOTIVATION, DISCIPLINE AND ACADEMIC PERFORMANCE IN PHYSICAL EDUCATION

KIRTI
Dr. Urvesh Sharma
Amir Khan

Abstract:

It is essential to comprehend the relationship between academic achievement, discipline, and motivation in physical education in order to maximise learning results and improve students' overall growth in this area. The understanding of this knowledge can provide valuable insights for educators, institutions, and policymakers when developing strategies to enhance motivation, cultivate discipline, and enhance academic performance within the realm of physical education. The objective of this study is to analyse the complicated relationships between discipline, academic achievement, and motivation within the realm of physical education among students. The research was selected a sample size of 200 participants to iA sample size of 200 participants will be chosen for this research in order to examine. The methodology involves the use of statistical techniques such as correlation testing, T-tests, and structural equation modelling (SEM) with the AMOS software. The study's findings carry significant implications for educators, parents, and policymakers. The empirical evidence they offer can be utilized to formulate strategies with the goal of enhancing student motivation, discipline, and academic performance within the realm of physical education. The potential impact of this research on academic outcomes in physical education lies in its ability to offer more efficient and focused approaches. The potential advantages extend beyond individual students to encompass the entire educational community.

Keywords: Physical Education, Motivation, Discipline, and Academic Performance

1. INTRODUCTION

1.1 PHYSICAL EDUCATION (PE)

Physical education (PE) is an essential component of a well-rounded education that focuses on the physical development and overall well-being of students. It encompasses a wide range of activities aimed at improving physical fitness, health, and teaching valuable life skills. In PE classes, students engage in various forms of exercise, sports, and recreational activities, which not only promote physical health but also foster teamwork, discipline, and self-confidence. Beyond the immediate physical benefits, physical education contributes to a healthier lifestyle, reduces the risk of chronic diseases, and enhances cognitive performance (Marakushyn et al., 2020). PE is instrumental in instilling the importance of regular physical activity from an early age, setting the foundation for a lifelong commitment to fitness and overall well-being. Moreover, it teaches students about the significance of fair play, sportsmanship, and the development of motor skills, making it an integral part of holistic education programs around the world (Kholmirzaevich, 2022).

The most concerning issue for secondary Physical Education (PE) instructors is the knowledge of cognitive pathways connected to students' academic achievement and behavioural discipline. Due to the fact that it is a crucial sign of how well the teaching- learning process is being carried out, discipline in the classroom has therefore become one of the educational community's top concerns (Karlen et al., 2019). The goal of the educational system is to encourage prosocial behaviours in order to provide the best possible learning and teaching environments and ensure that students perform as expected. For the purpose of setting up the classroom environment so that scheduled activities may be carried out, effective teaching tactics are crucial. The learning goals will really be met by instructors who encourage a learning environment that is engaging and in which students participate in its creation (Claver et al., 2020). Contrarily, instructors who do not support an environment in the classroom where students are engaged, independent, and interactive will find it more difficult to accomplish the intended learning goals.

When it comes to the teacher's role in promoting disciplined behaviour, effective teaching techniques and attitudes help to minimize behavioural issues. Giving students instruction in physical education skills improves group management, gives teachers more time to rectify errors and provide students feedback, and raises students' engagement, autonomy, and classroom productivity—all of which have a positive impact on academic performance (Ramsey et al., 2022). There has been a lot of research done on the connection between teachers' abilities and students' academic success. Positive outcomes are linked to student autonomy, constructive criticism, and participatory techniques that center the teaching-learning process on the individual student. such as disciplined conduct and academic success in PE (Vasconcellos et al., 2020). However, due to the very complex nature of PE sessions in secondary school, it is sometimes necessary for the instructor to divert attention from the students' academic progress in order to prioritize more regulated teaching techniques and prevent disruptive behaviours. Among the demanding circumstances of the classroom setting, student motivation is identified as a major variable when analyzing secondary school disciplinary behaviours and academic accomplishment, but also in PE achievement (Leo et al., 2022).

1.2 Motivation's Role in Physical Education

Motivation plays a pivotal role in the realm of physical education, shaping students' attitudes and behaviors towards physical activity and fitness. It is the driving force that empowers individuals to engage actively and persistently in physical education, ultimately influencing their lifelong health and well-being (Karimi & Sotoodeh, 2020).

Motivation in physical education is multifaceted. Here are some key aspects:

1.2.1 Intrinsic Motivation

This type of motivation is internal and emanates from personal satisfaction, enjoyment, or a genuine interest in physical activities. In physical education, fostering intrinsic motivation is crucial. When students find enjoyment in activities like team sports, dance, or exercise, they are more likely to participate willingly and consistently (Kaylene & Rosone, 2016).

1.2.2 Extrinsic Motivation

Extrinsic motivation, on the other hand, stems from external factors such as rewards or recognition. In a physical education setting, this could involve grades, competition, or praise from teachers and peers. While extrinsic motivation can be effective in the short term, the challenge is to transition students towards internal motivation over time (Standage et al., 2003).

1.2.3 Setting Goals

Setting and achieving goals is a powerful motivator. In physical education, students can establish fitness goals, performance benchmarks, or even goals related to personal improvement. Working towards these objectives provides a sense of purpose and achievement.

1.2.4 Variety of Activities

Offering a diverse range of physical activities ensures that students with varying interests and abilities can find something that motivates them. Whether it's traditional sports, yoga, or dance, providing options can spark enthusiasm.

1.2.5 Inclusive and Supportive Environment

Creating an inclusive and supportive environment where students feel safe and encouraged is crucial. Teachers play a key role in fostering motivation by providing constructive feedback, adapting activities to accommodate different skill levels, and instilling a sense of belonging.

1.2.6 Positive Role Models

Inspirational role models, such as teachers and peers, can motivate students by demonstrating the benefits of an active lifestyle. Their stories of achievement can be incredibly influential.

1.2.7 Relevance

Demonstrating the real-world relevance of physical education is important. Educating students on how physical fitness impacts overall health and well-being can be motivating, as it emphasizes the practical importance of staying active (Coumans et al., 2022).

1.2.8 Encouraging Autonomy

Allowing students to have a say in the activities they participate in or giving them a degree of autonomy can boost motivation. When students feel they have a choice and control over their experiences, they are more likely to be engaged.

1.2.9 Celebrating Achievements

Recognizing and celebrating achievements, whether big or small, can be a powerful motivator. This recognition can come in the form of awards, certificates, or simple acknowledgments of progress.

In conclusion, motivation is the driving force behind success in physical education. By nurturing intrinsic motivation, offering a variety of activities, creating a supportive environment, and setting achievable goals, physical education can help students not only develop the physical skills and habits they need for a healthy life but also the motivation to sustain them throughout their lifetime.

1.3 Discipline in Physical Education

The key to success in physical education is maintaining discipline, which also helps students get the most out of this important academic field. It incorporates the values of restraint, dedication,

and loyalty to customs and practices. Discipline in physical education entails more than just obeying rules; it also involves the development of wholesome habits, effective time management, and the capacity to persist through difficult physical tasks (Leyton-Román et al., 2021). Disciplined students are more likely to succeed in both their academic and athletic endeavors during physical education sessions. In order to achieve their fitness objectives, whether it be learning a new skill or keeping up a regular workout regimen, discipline teaches kids the value of consistency, effort, and devotion. A solid foundation for long-term health and happiness is also laid through physical education discipline. It instills traits that may be applied to other facets of life, such accountability and resiliency (Cen et al., 2019). In essence, physical education discipline extends beyond the gym or the playing field; it provides students with crucial life skills that support their complete development.

In physical education, discipline is vital and emphasizes the need of following safety protocols. This entails avoiding potentially dangerous behaviours in addition to wearing the proper clothing and warming up before physically demanding tasks. The degree of discipline maintained within these safety procedures determines whether injuries are prevented. Discipline also promotes a respectful environment among students and between students and teachers. Respect is the cornerstone of productive collaboration, teamwork, and the creation of a supportive learning environment (Trad et al., 2021). Pupils acquire the ability to follow the regimented format of physical education sessions; promptness, engagement, and careful attention to directions become essential. In this case, discipline helps to create a targeted and well-structured learning environment. In addition to the physical components, kids learn important lessons in emotional and self-control, particularly in demanding or competitive environments. This emphasizes the significance of discipline in forming behaviours both on and off the playing field. The following are some key points of discipline in physical education.

- **Effort and Perseverance:** The practice of discipline instills in one the values of toil and perseverance. Students learn that attaining both physical fitness & technical competence requires continual work and practice on their part in order to be successful. This work ethic might perhaps assist them in other areas of their life as well.
- **Ethical Conduct and Sportsmanship:** Discipline encourages moral behaviour and respect for others in sports. Students are taught the value of being honest, fair, and respectful to others. These principles apply to a variety of real-world circumstances in addition to physical education.
- **Time Management:** The importance placed on discipline in physical education contributes to effective management of time. Students need to cultivate habits that will assist them in their educational endeavors while maintaining a healthy balance among their academic responsibilities and their physical interests and hobbies.

So many authors will have discussed about The Influence of Motivation, Discipline and Academic Performance in Physical Education by using different methods those methods are given below:

(Ledesma et al., 2021) This research investigated the correlation between online learning and academic achievement in physical education bachelor programmers. The study indicates modest online learning in the programmer. Students report moderate satisfaction with academic success, with better engagement with professors and effective performance. This study contributes to online learning growth by providing information on student

status during online learning. (Osipov et al., 2021) Physical activity (PA) is necessary for a healthy lifestyle and disease prevention. COVID-19 limits on social interaction and public places may affect student PA and PE academic progress. The research examined university students' general and sport/fitness PA levels and PE academic accomplishment before and after the COVID-19 pandemic ended face-to-face PE courses. After cancellation, all participants significantly (p0.05) decreased their overall PA, sport/fitness PA, and PE academic performance. After face-to-face PE courses ended, FG-3 students' sport/fitness PA levels dropped significantly (p0.05). PE mean grade scores dropped considerably when face-to-face PE sessions ended. After face-to-face PE courses ended, FG-2 students scored significantly higher (p0.05) in PE. In the context of COVID-19 self-isolation, student-focused active PA promotion activities are needed.
(Baena-extremera & Ortiz-camacho, 2020) The purpose of the study was to determine which curriculum subjects best predict school satisfaction, tedium, and academic performance. The sample was of 680 adolescents of physical education (339 males, 341 females) with age between 12 and 18 years (M ¼ 14.83; SD ¼ 1.45). In this study utilized a questionnaire comprised of scales for subject satisfaction, intrinsic school satisfaction, and academic performance. There were performed descriptive analyses, correlations, and structural regression models. High satisfaction and academic achievement in physical education stand out. (Bakhmat et al., 2019) The purpose of this study is to provide empirical support for the theoretical and methodological foundations of professional education for teachers of physical education within the context of the informational and educational environment of a university. The experimental check-up reveals that the model that was established is successful. This model was utilized by the students of the experimental groups because it made it possible for the students to enhance the quality of their pedagogical knowledge, form autonomous work skills, and boost the degree of professional motivation. The check-up was conducted via experiments. E-library, e-account, e-room, e-communication, and parent- teacher e-meetings are some of the keywords associated with this topic. (Lonsdale et al., 2019) The provision of a high-caliber physical education (PE) programming is essential to the success of all-encompassing school activities designed to encourage physical activity (PA). This study evaluated the effectiveness of a teacher professional development intervention that was partly provided via the internet. The intervention was aimed to increase the number of chances for students to be physically active during physical education classes and to boost adolescents' enthusiasm to participate in PE and PA. AMPED resulted in marginal gains in MVPA and holds its own advantageously in comparison to earlier treatments that were carried out purely face-to-face. The transmission of professional learning interventions might be made more accessible to a wider audience via the use of online teacher training.

2. AIM & OBJECTIVES

AIM

The aim of this study is to investigate the relationship between motivation, discipline, and academic performance in the context of physical education among students.

OBJECTIVES

- To assess the level of motivation among students in physical education classes.
- To measure the academic performance of students in physical education.
- To examine the relationship between motivation and academic performance in physical education.
- To explore the relationship between discipline and academic performance in physical education
- To investigate the impact of motivation and discipline on overall academic achievement in physical education.

3. HYPOTHESIS

- There will be significant differences in motivation levels among students in physical education classes.
- There will be significant differences in the academic performance of students in physical education.
- There will be significant relationship between motivation and academic performance in physical education.
- There will be significant relationship between discipline and academic performance in physical education.
- There will be significant impact of Motivation and discipline on overall academic achievement in physical education.

4. MATERIALS AND METHODS

This chapter describes the research technique used to look at The Influence of Motivation, Discipline and Academic Performance in Physical Education. Understanding how The Influence of Motivation, Discipline and Academic Performance in Physical Education development is the goal of this research. A detailed discussion is held on the study design, participants, data gathering techniques, and data analysis methodologies.

4.1 RESEARCH DESIGN

In order to give an appropriate answer to the research problem that has been carried out up to this point, the research design for this study is consisted of a number of procedures and strategies that were formed to logically integrate numerous research components. These procedures and strategies were designed to provide a suitable response to the research issue. The purpose of this chapter is to provide information about the research methodologies that were employed in the inquiry that is being discussed in this chapter. The design of the study will decide the procedures that are used for doing the research, the analysis of the data, and the collection of the data.

4.2 SAMPLING SIZE AND SAMPLING TECHNIQUE

4.2.1 SAMPLING SIZE

A sample size of 200 participants will be chosen for this research in order to examine the influence of Motivation, Discipline and Academic Performance in Physical Education. This sample size was chosen after considering resources, practicality, and the need for statistical power in order to identify significant effects.

4.2.2 SAMPLING TECHNIQUE (RANDOM SAMPLING)

A method known as random sampling is one in which every individual in the population has an independent and equal probability of being chosen for further consideration. It guarantees that participants are represented fairly and raises the extent to which the results of the research may be applied to the broader community. Participants are often selected using random numbers or tables, which helps to reduce the possibility of selection bias and improves the validity of the research.

4.3 DATA COLLECTION

The research will include questionnaires, pre- and post-assessments, organized observations, and interviews. Families and teachers will be surveyed and asked about the emotional and social growth of kids. Pre- and post-intervention standardized examinations will evaluate social and emotional abilities. In physical education classrooms, structured observations will record real-time interactions with others and emotions. To get qualitative perspectives, teachers, parents, & physical education instructors will be interviewed in-depth. Our multi-method approach guarantees a complete knowledge of how physical education affects early childhood social and emotional development.

4.4 INCLUSION CRITERION & EXCLUSION CRITERION

INCLUSION CRITERION

The inclusion criteria were instructors and parents of young children attending secondary high schools who voluntarily gave informed permission, demonstrating their active participation and adding a variety of views from the perspectives of both the educational and parental domains to the research.

EXCLUSION CRITERION

The study's exclusion criteria comprised parents and instructors of young children enrolled in secondary high schools who indicated a lack of interest in participating. Furthermore, participants who were not present at the designated site throughout the duration of data collection were Committed.

4.5 DATA ANALYSIS

A comprehensive data analysis methodology was utilized in this research endeavor to examine the complex interconnections among diverse variables pertaining to the social and emotional development of young children. In order to thoroughly investigate these associations, three sophisticated statistical techniques were applied: structural equation modelling (SEM), regression analysis, and correlation analysis. The selection of these analytical methods

was predicated on their capacity to unveil both explicit and implicit connections between the variables under investigation, thereby furnishing a more intricate comprehension of the elements that impact social and emotional growth within the realm of early childhood education.

4.6 Regression Analysis

Regression analysis, a critical statistical method in our study, investigates the influence of particular factors on young children's social and emotional development. We get useful insights into the links between independent and dependent variables by analyzing these predictors. We discover which variables have a substantial effect on social and emotional abilities using regression models, offering a more comprehensive view. This technique quantifies the amount and direction of these impacts, which aids in the identification of significant drivers. Educators may use these data to improve teaching practices by concentrating on important elements. Policymakers obtain strategic advice for developing focused initiatives that promote holistic child development. Armed with predictive insights, parents may establish supportive home settings that coincide with characteristics important for their children's social and emotional development. Our research uses regression analysis to transform complicated data into actionable insight, enhancing collaborative efforts to develop well-rounded, emotionally intelligent persons.

4.7 Structural Equation Modeling (SEM)

In this research, structural equation modelling (SEM) is used as a sophisticated analytical framework to provide a comprehensive understanding of the intricate web of interactions that shape social and emotional development in young children. SEM, in contrast to previous approaches, includes both measuring and structural components, providing a holistic approach. SEM reveals hidden patterns by illuminating latent variables and their observable indicators, revealing direct and indirect effects among components. This strategy allows us to evaluate theoretical models while also providing in-depth insights into causal links. SEM allows for a more detailed investigation of how many factors like as parental engagement, peer relationships, and classroom dynamics interact, revealing insight on the subtle dynamics of early childhood development. Our research not only deciphers these links but also confirms theoretical frameworks, expanding our knowledge of the many processes that contribute to social and emotional development.

4.8 Tools Utilized

SPSS Statistics as well as AMOS were useful tools for data analysis in this investigation. SPSS was used for correlation and regression analyses, while AMOS was used for advanced Structural Equation Modelling (SEM), allowing for a thorough investigation of early childhood social and emotional development aspects.

4.9 SPSS

SPSS Statistics was used as the foundation for the correlation and regression analysis in this study. Its comprehensive characteristics enabled for a thorough investigation of variable connections, measuring correlations, and finding key predictors. SPSS provides a statistical framework, allowing for accurate insights into the intricate dynamics of early children's social and emotional development.

4.10 AMOS (Analysis of Moment Structures)

AMOS, a specialized tool for Structural Equation Modelling (SEM), was critical in this research. AMOS offers a comprehensive framework for verifying theoretical models and studying causal linkages among multiple elements by combining measurement and structural components. Its sophisticated capabilities shed light on hidden factors and their visible indications, allowing for a better understanding of the subtle linkages that influence social and emotional development. The complex analyses performed by AMOS enhanced the study's results, increasing the total depth of knowledge in the area of early childhood education.

5 RESULTS AND DISCUSSION

H1: There will be significant differences in motivation levels among students in physical education classes.

TABLE 1 GROUP STATISTICS

	Parents/Teachers	N	Mean	Std. Deviation	Std. Error Mean
Discipline	Parents	100	2.8260	.46593	.04659
	Teachers	100	3.9200	.33874	.03387

The hypothesis (H1) suggests that there may be notable variations in motivation levels among students in physical education classes. Specifically, it aims to examine the impact of parents and teachers on discipline as a means of comparison. A study was conducted to analyse the influence of two groups, specifically "Parents" and "Teachers," on student motivation. Table 1 presents the group statistics, revealing that the "Parents" group has a mean motivation level of 2.826. The standard deviation for this group is 0.46593, indicating the variability of motivation levels within the group. Additionally, the standard error of the mean is calculated to be 0.04659, representing the precision of the mean estimate. The "Teachers" group exhibits a higher mean motivation level of 3.920, accompanied by a smaller standard deviation of 0.33874 and a standard error of the mean of 0.03387.

TABLE 2 INDEPENDENT SAMPLES TEST

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Discipline	Equal variances assumed	6.758	.010	-18.991	198	.000	-1.09400	.05761
	Equal variances not assumed			-18.991	180.801	.000	-1.09400	.05761

Table 2 presents the outcomes of an independent samples t-test, which was conducted to evaluate the significance of the difference in mean motivation levels between the "Parents" and "Teachers" groups. The Levene's test for equality of variances reveals that the assumption of equal variances is not met ($F = 6.758$, $p = 0.010$). As a result, the t-test results are reported for both equal and unequal variances assumed. The t-test analysis reveals a substantial and statistically significant distinction in motivation levels between the two groups. This is supported by a t-value of -18.991 and p-values less than 0.001 in both instances. Furthermore, it is worth noting that the mean difference between the two groups is -1.094. This indicates that, on average, one group scored 1.094 units lower than the other group. The standard error difference of 0.05761 suggests that this mean difference is relatively precise and unlikely to be due to random chance.

Based on the statistical analysis, it can be concluded that there is substantial evidence supporting the hypothesis that motivation levels among students in physical education classes vary significantly depending on the influence of parents and teachers on discipline. According to the t-test results, the motivation levels of the "Teachers" group are significantly higher than those of the "Parents" group. The findings suggest that when it comes to physical education classes, the active participation of teachers in shaping discipline has a more positive effect on student motivation compared to the influence of parents.

H2: There will be significant differences in the academic performance of students in physical education.

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TABLE 3 GROUP STATISTICS

	Parents/Teachers	N	Mean	Std. Deviation	Std. Error Mean
Academic Performance	Parents	100	3.2280	.20503	.02050
	Teachers	100	3.6260	.46767	.04677

The hypothesis (H2) was to analyse the potential significant differences in academic performance among students in physical education. The specific focus was to compare the influence of parents and teachers. A study was conducted to analyse the influence of two groups, "Parents" and "Teachers," on student academic performance. Table 3 presents the group statistics for the "Parents" group, focusing on the mean academic performance score. The mean score is calculated to be 3.228, indicating the average performance level of this group. The standard deviation, measuring the variability of scores within the group, is relatively low at 0.20503. Additionally, the standard error of the mean is determined to be 0.02050, representing the precision of the mean estimate. In contrast, the "Teachers" group exhibits a higher average academic performance score of 3.626. This group also has a slightly larger variability in scores, as indicated by the standard deviation of 0.46767. The standard error of the mean for this group is calculated to be 0.04677.

TABLE 4 INDEPENDENT SAMPLES TEST

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Academic Performance	Equal variances assumed	23.843	.000	-7.794	198	.000	-.39800	.05106
	Equal variances not assumed			-7.794	135.700	.000	-.39800	.05106

Table 4 displays the outcomes of an independent samples t-test that was performed to evaluate if there are noteworthy differences in academic performance between the "Parents" and "Teachers" groups. The Levene's test for equality of variances reveals a statistically significant difference in variances ($F = 23.843$, $p < 0.001$). As a result, it is necessary to report the t-test results considering both equal and unequal variances. The t-test results reveal a substantial and statistically significant distinction in academic performance between the two groups. This is evident from the t-value of -7.794 and p-value less than 0.001, which is consistent across both cases. In addition,

it is worth noting that the mean difference between the groups is -0.398, and this difference is accompanied by a standard error difference of 0.05106.

The statistical analysis concludes that there is strong evidence supporting the hypothesis that the academic performance of students in physical education classes varies significantly based on the influence of parents and teachers. The t-test analysis reveals that the "Teachers" group displays a statistically significant advantage in academic performance when compared to the "Parents" group. This advantage is supported by a notable negative mean difference. The findings indicate that the role of teachers in influencing academic performance is more beneficial in physical education classes compared to the influence of parents.

H3: There will be significant relationship between motivation and academic performance in physical education

TABLE 5 CORRELATIONS

		Motivation	Academic Performance
Motivation	Pearson Correlation	1	.772**
	Sig. (2-tailed)		.000
	N	200	200
Academic Performance	Pearson Correlation	.772**	1
	Sig. (2-tailed)	.000	
	N	200	200
**. Correlation is significant at the 0.01 level (2-tailed).			

In order to examine the association between variables, a Pearson correlation analysis was performed using a sample of 200 individuals. The data suggests that there is a significant and positive relationship between motivation and academic performance in physical education. This is supported by a strong Pearson correlation coefficient of 0.772. The output indicates that the correlation is statistically significant at the 0.01 level, considering both tails. The data indicates a strong and significant correlation between motivation and academic achievement in the domain of physical education. This suggests that as motivation levels rise, there is a tendency for academic performance to improve. The finding of this study supports the initial hypothesis, indicating that there is evidence to suggest a significant relationship between motivation and academic performance in the context of physical education. The study's findings indicate that increasing motivation in students participating in physical education could potentially result in better academic performance in this subject area.

H4: There will be significant relationship between discipline and academic performance in physical education.

TABLE 6 CORRELATIONS

		Discipline	Academic Performance
Discipline	Pearson Correlation	1	.622**
	Sig. (2-tailed)		.000
	N	200	200
Academic Performance	Pearson Correlation	.622**	1

	Sig. (2-tailed)	.000	
	N	200	200
**. Correlation is significant at the 0.01 level (2-tailed).			

In order to examine the connection between variables, a Pearson correlation analysis was performed using a sample size of 200 individuals. The data indicates a strong positive relationship between discipline and academic performance in physical education, as evidenced by a Pearson correlation coefficient of 0.622. The correlation in the findings is considered statistically significant at the 0.01 level (two-tailed). The data indicates a significant correlation between discipline levels and academic performance in the domain of physical education. Individuals with higher levels of discipline generally achieve better academic performance in this particular field. The study's results confirm the original hypothesis, indicating that there is a noteworthy correlation between discipline and academic performance in physical education. The statement suggests that promoting discipline in physical education may have a positive impact on academic performance within this particular context

H5: There will be significant impact of Motivation and discipline on overall academic achievement in physical education

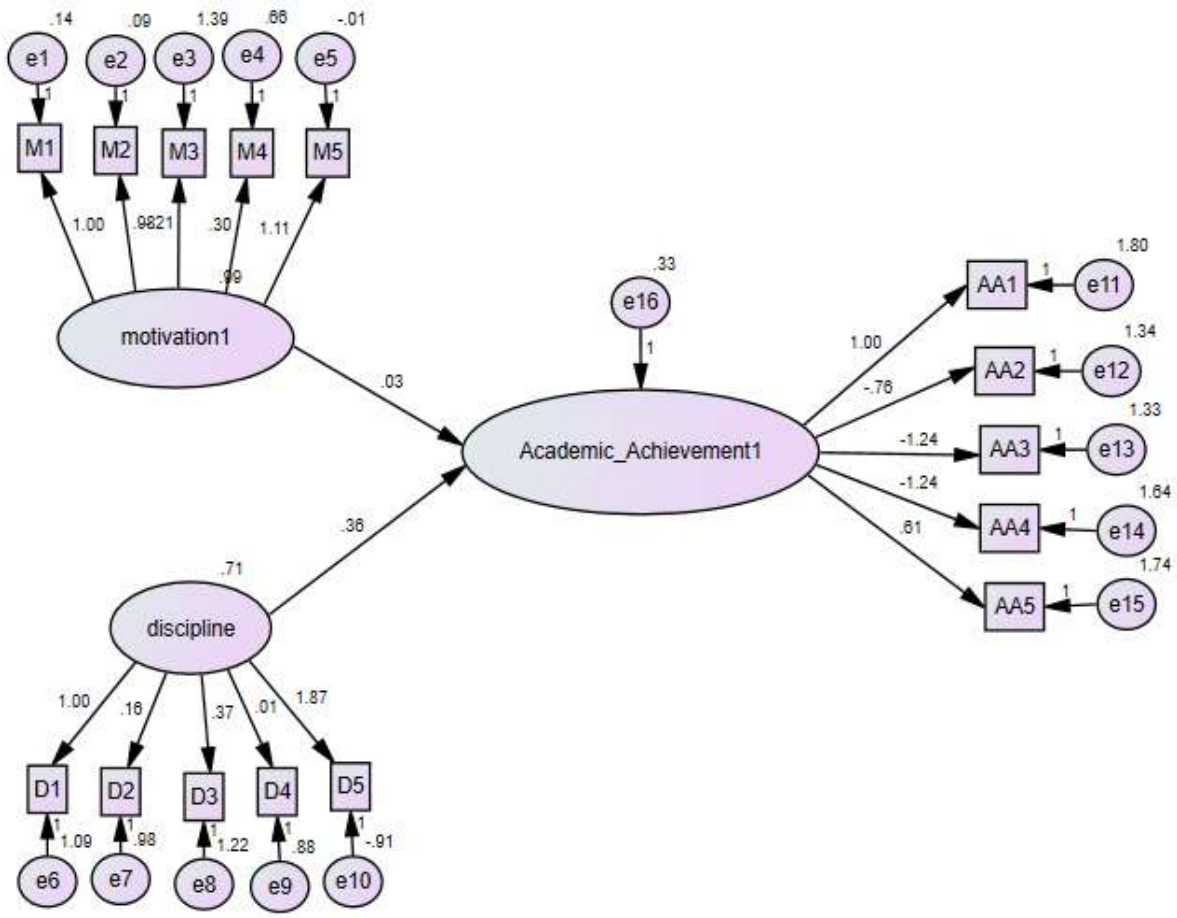

TABLE 7 REGRESSION WEIGHTS: (GROUP NUMBER 1 - DEFAULT MODEL)

PATH			Un-standardized	S.E.	standardized	C.R.	P
Academic Achievement	<---	Motivation	.029	.052	.044	.551	.002
Academic Achievement	<---	Discipline	.356	.083	.464	4.291	***
AA1	<---	Academic Achievement	1.000		.433		
AA2	<---	Academic Achievement	-.756	.212	-.388	-3.570	***
AA3	<---	Academic Achievement	-1.236	.287	-.569	-4.315	***
AA4	<---	Academic Achievement	-1.239	.295	-.529	-4.197	***
AA5	<---	Academic Achievement	.608	.211	.285	2.884	.004
M1	<---	Motivation	1.000		.936		
M2	<---	Motivation	.983	.034	.955	29.112	***
M3	<---	Motivation	-.211	.083	-.176	-2.529	.011
M4	<---	Motivation	.298	.058	.343	5.140	***
M5	<---	Motivation	1.106	.030	1.006	37.462	***
D1	<---	Discipline	1.000		.629		
D2	<---	Discipline	.163	.058	.138	2.795	.005
D3	<---	Discipline	.370	.073	.272	5.095	***
D4	<---	Discipline	.010	.053	.009	.187	.851
D5	<---	Discipline	1.867	.297	1.259	6.279	***

THE REGRESSION WEIGHTS WITHIN THE STRUCTURAL EQUATION MODEL OFFER VALUABLE INSIGHTS INTO THE COMPLEX DYNAMICS OF ACADEMIC ACHIEVEMENT IN THE CONTEXT OF PHYSICAL EDUCATION. THE ANALYSIS EMPHASISES THE IMPORTANCE OF MOTIVATION AND DISCIPLINE IN SHAPING ACADEMIC PERFORMANCE. THE STANDARDISED WEIGHT OF 0.044 SUGGESTS A POSITIVE CORRELATION BETWEEN MOTIVATION AND ACADEMIC ACHIEVEMENT. THIS IMPLIES THAT HIGHER LEVELS OF MOTIVATION ARE ASSOCIATED WITH BETTER ACADEMIC OUTCOMES. THE STATISTICAL SIGNIFICANCE OF THIS RELATIONSHIP IS SUPPORTED BY A CRITICAL RATIO (C.R.) OF 0.551 AND A LOW P-VALUE OF 0.002.

THE RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT AND DISCIPLINE IS SIGNIFICANTLY STRONGER, AS INDICATED BY A STANDARDISED WEIGHT OF 0.464. THE PRESENCE OF A POSITIVE ASSOCIATION SUGGESTS THAT THERE IS A CORRELATION BETWEEN HIGHER LEVELS OF DISCIPLINE AND BETTER ACADEMIC PERFORMANCE IN PHYSICAL EDUCATION AMONG STUDENTS. THE

STRENGTH OF THIS RELATIONSHIP IS EMPHASISED BY A C.R. OF 4.291 AND THE INCLUSION OF THREE ASTERISKS (***), INDICATING HIGH STATISTICAL SIGNIFICANCE. THE RESULTS OF THIS STUDY HIGHLIGHT THE IMPORTANT INFLUENCE OF MOTIVATION AND DISCIPLINE ON ACADEMIC PERFORMANCE IN THE FIELD OF PHYSICAL EDUCATION.

ADDITIONALLY, IT IS IMPORTANT TO NOTE THAT THE EXAMINATION OF LATENT FACTORS, SPECIFICALLY REFERRED TO AS AA1 THROUGH AA5, INDICATES THAT THESE FACTORS HAVE DIFFERENT LEVELS OF IMPACT ON ACADEMIC PERFORMANCE. AA5 DEMONSTRATES A FAVOURABLE INFLUENCE ON ACADEMIC PERFORMANCE, IMPLYING THAT IT HAS A BENEFICIAL EFFECT. HOWEVER, AA2, AA3, AND AA4 DISPLAY ADVERSE CONNECTIONS, SUGGESTING THAT THEY MAY IMPEDE ACADEMIC ACHIEVEMENT. THE LATENT FACTORS M2 AND M5 SHOW SIGNIFICANT POSITIVE CORRELATIONS WITH MOTIVATION, INDICATING A STRONG RELATIONSHIP BETWEEN THESE FACTORS AND THE INDIVIDUAL'S LEVEL OF MOTIVATION. SIMILARLY, THE LATENT FACTORS D3 AND D5 EXHIBIT STRONG POSITIVE RELATIONSHIPS WITH DISCIPLINE, SUGGESTING A STRONG ASSOCIATION BETWEEN THESE FACTORS AND THE INDIVIDUAL'S LEVEL OF DISCIPLINE.

IN CONCLUSION, THIS THOROUGH EXAMINATION EMPHASISES THE IMPORTANCE OF DISCIPLINE AND MOTIVATION IN DETERMINING ACADEMIC SUCCESS IN THE AREA OF PHYSICAL EDUCATION. THE TEXT HIGHLIGHTS THE IMPORTANCE OF CONSIDERING THE DIVERSE EFFECTS THAT DIFFERENT UNDERLYING FACTORS HAVE ON ACADEMIC ACHIEVEMENTS. THE INSIGHTS PROVIDED ARE EXTREMELY VALUABLE FOR EDUCATORS AND POLICYMAKERS WHO ARE INTERESTED IN IMPROVING THE ACADEMIC PERFORMANCE OF STUDENTS IN PHYSICAL EDUCATION PROGRAMMES.

TABLE 8 MODEL FIT SUMMARY

Variable	Value
Chi-square value(χ^2)	606.739
Degrees of freedom (df)	266
CMIN/DF	2.281
P value	0.068
GFI	0.901
RFI	0.906
NFI	0.923
IFI	0.955
CFI	0.955
RMR	0.047
RMSEA	0.055

The quality of fit was acceptable representation of the sample data (χ^2 = 606.739), NFI (Normed Fit Index) =0.923; IFI (Incremental fit index) = 0.955, GFI (Goodness of Fit) = 0.901, RFI

(Relative Fit Index) = 0.906 and CFI (Comparative Fit Index) =0.955 which is much larger than the 0.90. Similarly, RMR (Root Mean Square Residuals) =0.047 and RMSEA (Root mean square error of approximation) = 0.055 values are lower the 0.080 critical value**.** Results indicated a good fit for the model presented including RMSEA of 0.055, RMR of 0.047, GFI of 0.901, and CFI of .955.

CONCLUSION:

The main objective of our extensive research was to examine the complex relationship between academic performance, motivation, and discipline in the context of physical education among students. After conducting a thorough examination of multiple hypotheses and employing various statistical methods, we have discovered several significant findings.

The study, labelled as H1, focused on examining the relationship between motivation levels of students and the influence of parents and teachers. The findings of the study indicate that teachers have a stronger and more positive impact on student motivation compared to parents. This suggests that, in the context of physical education classes, the active involvement of teachers in instilling discipline exerts a more substantial influence on student motivation than the influence of parents. In H2, an investigation was conducted to analyse the impact of parents and teachers on academic performance. The study found that the "Teachers" group showed significantly higher academic performance compared to the "Parents" group. This highlights the positive influence that teachers have on student achievements.

Additionally, the results of the Pearson correlation analysis supported hypothesis H3, providing evidence of a statistically significant and positive association between motivation and academic performance in the context of physical education. The study revealed a significant correlation between higher motivation levels and enhanced academic outcomes in this specific area, highlighting the crucial influence of motivation on students' achievements. H3 proposed a strong connection between discipline and academic performance, which was confirmed by the Pearson analysis that revealed a substantial positive correlation. The findings indicate that there is a positive relationship between discipline and academic performance in the context of physical education. H4 suggests investigating the combined influence of motivation and discipline on academic achievement in physical education. The results of the structural equation model indicate that both motivation and discipline have a notable impact. The analysis highlighted the importance of motivation and discipline in influencing academic achievements in the field of physical education.

Finally, this study contributes to our knowledge of the complex elements impacting academic achievement in the field of physical education. The text highlights the significant impact of motivation, discipline, and teacher influence on students' academic success. The findings presented in this study have important implications for educators, parents, and policymakers. They provide empirical evidence that can be used to develop strategies aimed at improving student motivation, discipline, and academic performance in the context of physical education. This research has the potential to enhance academic outcomes in physical education by providing more effective and targeted approaches. This would benefit not only students but also the educational community as a whole.

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THE IMPACT OF A HIGH-FAT HIGH-PROTIEN DIET ON HEALTH AND WIEGHT MANAGEMENT: A COMPREHENSIVE REVIEW

AKASH GOPAL KESHARWANI
Research scholar (H.V.P.M. Amravati)
kesharwaniakash928@gmail.com
ARCHANA KUMARI
Research scholar Central University of South Bihar Gaya
archanakumaribhadani@gmil.com

ABSTRACT:

This comprehensive review examines the effects of a high-fat, high-protein diet on various aspects of health and weight management. The diet, characterized by an increased intake of dietary fats and proteins while reducing carbohydrate consumption, has gained popularity in recent years. The study encompasses a thorough analysis of the physiological, metabolic, and clinical implications of such a dietary approach. Key findings reveal that high-fat, high-protein diets often lead to rapid initial weight loss, attributed to reduced calorie intake and enhanced satiety. Furthermore, ketosis, a metabolic state induced by low carbohydrate intake, plays a significant role in modulating energy expenditure and lipid metabolism. The potential benefits of this diet extend beyond weight loss, including improved insulin sensitivity, better lipid profiles, and reduced inflammation markers. However, concerns regarding the sustainability and long-term effects of this dietary pattern are also addressed. Potential drawbacks, such as micronutrient deficiencies and limited fibre intake, are discussed, emphasizing the importance of a well-balanced nutritional approach. Additionally, the impact on specific populations, including individuals with metabolic disorders or certain health conditions, is considered.

In conclusion, a high-fat, high-protein diet can be an effective short-term strategy for weight loss and may confer various metabolic benefits. Nevertheless, its long-term suitability and potential health risks necessitate careful consideration and professional guidance. Future research should focus on optimizing the composition and duration of such diets for sustainable, individualized health outcomes.

INTRODUCTION

The high - fat, high-protein diet, characterized by an elevated intake of lipids and proteins relative to carbohydrates, stands in contrast to conventional dietary guidelines that often emphasize a low-fat, balanced macronutrient composition. This dietary paradigm has gained traction in various health and fitness circles, with proponents asserting benefits ranging from enhanced satiety and metabolic flexibility to improved body composition and athletic performance. However, this approach is not without controversy, as critics raise concerns regarding potential long-term health consequences, particularly in relation to cardiovascular health and sustainability. As individuals increasingly seek personalized nutrition strategies tailored to their unique needs and goals, it is imperative to comprehensively evaluate the physiological effects of high-fat, high-protein diets.

This review synthesizes current research findings, encompassing studies examining metabolic responses, weight management outcomes, and potential impacts on cardiovascular and metabolic health markers. By presenting a balanced analysis of both the potential benefits and risks associated with this dietary pattern, we aim to equip readers with evidence-based insights to make informed decisions regarding their nutritional choices. Through an in-depth exploration of the available literature, this review seeks to address critical questions surrounding the high-fat, high-protein diet: What are the physiological mechanisms underlying its effects on metabolism and satiety? How does it compare to alternative dietary approaches in terms of weight management? What are the potential implications for cardiovascular and metabolic health? By synthesizing the latest scientific evidence, this review aims to provide a comprehensive overview of the multifaceted impact of a high-fat, high-protein diet on health and weight management.

WHY IS SATIETY IMPORTANT?

Satiety plays vital role in controlling how much we eat. For example, eating a large meal that leaves you feeling extremely full will likely mean that you will be feeling satisfied for longer and less likely to snack between meals, your next meal may also be smaller than usual.

3. NUTRITIONAL COMPOSITION OF HIGH-FAT, HIGH-PROTEIN DIET

The hallmark of a high-fat, high-protein diet lies in its distinctive macronutrient profile, deviating notably from conventional dietary recommendations. This dietary paradigm places a substantial emphasis on the consumption of fats and proteins while limiting carbohydrates to varying degrees.

3.1 Fat Content In a high-fat, high-protein diet, fats constitute a significant proportion of daily caloric intake, often exceeding the recommended levels of traditional dietary guidelines. Saturated fats, monounsaturated fats, and polyunsaturated fats are all essential components, derived from sources such as avocados, nuts, seeds, olive oil, and fatty fish. Notably, this approach prioritizes natural, unprocessed sources of fats while minimizing trans fats and hydrogenated oils.

3.2 Protein Emphasis Proteins form another cornerstone of this dietary strategy, with an emphasis on adequate intake from both animal and plant sources. Lean meats, poultry, fish, dairy products, legumes, and nuts serve as primary protein reservoirs. This higher protein content is posited to support various physiological functions, including muscle maintenance, repair, and overall metabolic activity.

3.3 Carbohydrate Restriction In stark contrast to conventional dietary recommendations, high-fat, and high-protein diets often entail a notable reduction in carbohydrate intake. While not strictly ketogenic, these diets generally restrict the consumption of high-glycaemic carbohydrates, such as refined sugars and grains, in favour of complex, fibre-rich options like leafy greens, non-starchy vegetables, and limited servings of whole grains.

3.4 Micronutrient Considerations Given the unique macronutrient profile of high-fat, high-protein diets, and careful attention must be paid to micronutrient adequacy. Essential vitamins

and minerals, including but not limited to B-complex vitamins, vitamin D, calcium, and iron, may require special consideration or supplementation to ensure balanced nutrition.

3.5 Fluid Intake Adequate hydration is a critical component of any dietary pattern, including high-fat, high-protein diets. Individuals following this approach are advised to maintain sufficient water intake while also being mindful of electrolyte balance, particularly if ketosis is induced. Understanding the distinctive nutritional composition of high-fat, high-protein diets lays the foundation for comprehending their potential impact on health and weight management. The subsequent sections will delve into the physiological effects of this dietary paradigm, shedding light on its implications for metabolism, satiety, and overall well-being.

4. PHYSIOLOGICAL EFFECTS

Adopting a high-fat, high-protein diet initiates a cascade of physiological responses that play a pivotal role in shaping metabolic outcomes and overall health.

4.1 Metabolic Flexibility:

One of the hallmark effects of a high-fat, high-protein diet is the induction of metabolic flexibility. This dietary pattern encourages the body to rely on fat stores for energy, a process known as keto genesis. Through the reduction of carbohydrate intake, the liver produces ketone bodies, which serve as an alternative fuel source for various tissues, including the brain. This shift in metabolic substrate utilization can lead to improved insulin sensitivity and enhanced energy expenditure

4.2 Satiety and Appetite Regulation:

The increased intake of dietary fats and proteins often results in heightened feelings of satiety and reduced appetite. Fats and proteins are inherently more satiating than carbohydrates, leading to a potentially lower overall caloric intake. This phenomenon can contribute to weight management efforts by promoting a more controlled and sustainable approach to eating.

4.3 Insulin Sensitivity and Blood Sugar Regulation:

Studies suggest that high- fat, high-protein diets may positively influence insulin sensitivity. By moderating blood sugar levels and reducing the demand for frequent insulin spikes, this dietary pattern may benefit individuals with insulin resistance or diabetes. However, careful monitoring and individualized approaches are essential, as extreme variations in macronutrient intake can lead to unintended metabolic consequences.

4.4 Lipid Profile and Cardiovascular Health:

Contrary to initial concerns, research has yielded mixed findings regarding the impact of high-fat, high-protein diets on lipid profiles. While some studies suggest potential improvements in HDL cholesterol levels and triglyceride concentrations, others caution against potential adverse effects on LDL cholesterol. It is imperative to consider the quality of fats consumed and individualized responses when assessing cardiovascular implications.

4.5 Lean Body Mass Preservation

The elevated protein content of this dietary approach supports muscle preservation and may contribute to favourable body composition changes. Protein-rich meals promote muscle protein synthesis, making high-fat, high-protein diets potentially beneficial for individuals engaged in resistance training or seeking to maintain lean body mass during weight loss endeavours. By understanding these physiological effects, individuals can make informed decisions regarding the

adoption of a high-fat, high-protein diet and its potential implications for metabolic health and weight management. The subsequent sections will further explore the effects of this dietary pattern on cardiovascular health, blood sugar regulation, and other critical aspects of well-being.

5. HORMONAL IMPACT OF A HIGH-FAT, HIGH-PROTEIN DIET

The adoption of a high-fat, high-protein diet initiates a cascade of hormonal responses that influence metabolic processes, appetite regulation, and overall health.

5.1 Leptin and Ghrelin:

Satiety and Appetite Regulation Leptin, produced by adipose tissue, signals satiety to the brain, while ghrelin, secreted by the stomach, stimulates appetite. High-protein meals have been shown to increase leptin levels and decrease ghrelin secretion. This hormonal modulation contributes to heightened feelings of fullness and reduced appetite, potentially aiding in weight management.

5.2 Insulin Sensitivity and Glucose Regulation Insulin:

A key hormone in glucose metabolism, plays a pivotal role in blood sugar regulation. High-fat, high-protein diets have been associated with improved insulin sensitivity. This can lead to more efficient glucose utilization, potentially reducing the risk of insulin resistance and type 2 diabetes.

5.3 Growth Hormone:

Muscle Preservation and Growth Elevated protein intake stimulates the release of growth hormone, a key regulator of muscle preservation and growth. This hormonal response is particularly relevant in the context of weight management, as it supports the maintenance of lean body mass, essential for a sustainable approach to body composition changes

5.4 Cortisol Regulation:

Stress Response Cortisol, the primary stress hormone, can influence weight management efforts. High-fat, high-protein diets may help stabilize blood sugar levels and promote satiety, potentially mitigating excessive cortisol release associated with fluctuating blood sugar levels. This can contribute to a more balanced stress response.

5.5 Thyroid Hormones:

Metabolic Regulation Thyroid hormones play a crucial role in regulating metabolism. Some studies suggest that high-protein diets may have a modest influence on thyroid hormone levels. This may support metabolic rate and energy expenditure, but individual responses may vary, and close monitoring is essential, especially for individuals with existing thyroid conditions. Understanding the hormonal responses induced by a high-fat, high-protein diet provides critical insights into its potential impact on health. By considering these hormonal influences, individuals can make informed decisions regarding the suitability of this dietary approach for their specific health and fitness goals. The subsequent sections will further explore the effects of this dietary pattern on cardiovascular health, metabolic markers, and overall well-being**.**

6. CARDIOVASCULAR HEALTH

The influence of a high-fat, high-protein diet on cardiovascular health has been a subject of considerable interest and scrutiny. Understanding its effects on key cardiovascular markers is essential for a comprehensive assessment of its overall impact on health.

6.1 Lipid Profile:

The composition of dietary fats in a high-fat, high-protein diet can exert distinct effects on lipid profiles. While some studies suggest potential improvements in high-density lipoprotein (HDL) cholesterol levels, which is considered beneficial for cardiovascular health, the impact on low-density lipoprotein (LDL) cholesterol remains a topic of debate. It is imperative to differentiate between saturated and unsaturated fats, as well as consider individual responses to varying fat sources.

6.2 Triglyceride Levels:

Elevated levels of triglycerides are associated with an increased risk of cardiovascular disease. Some research suggests that high-fat, high-protein diets may lead to a reduction in triglyceride concentrations. However, the type and quality of fats consumed, as well as overall dietary balance, play crucial roles in determining this outcome.

6.3 Blood Pressure Regulation:

Blood pressure management is a critical component of cardiovascular health. Studies examining the effects of high-fat, high-protein diets on blood pressure have yielded mixed results. While some individuals may experience improvements, others may not exhibit significant changes. The presence of other dietary components, such as sodium intake, may influence these outcomes.

6.4 Endothelial Function:

The endothelium, a layer of cells lining blood vessels, plays a pivotal role in cardiovascular health. Endothelial dysfunction is a precursor to atherosclerosis and other cardiovascular conditions. Research on the impact of high-fat, high-protein diets on endothelial function is an area of on going investigation, with some studies suggesting potential benefits.

6.5 Inflammatory Markers:

Chronic inflammation is a key contributor to cardiovascular disease. The influence of a high-fat, high-protein diet on inflammatory markers such as C-reactive protein (CRP) and interleukin-6 (IL-6) is an area of active research. While some evidence suggests potential reductions in inflammation, further studies are needed to elucidate the underlying mechanisms. It is important to note that individual responses to dietary patterns vary, and factors such as genetic predisposition, overall diet quality, and existing health conditions play significant roles in cardiovascular outcomes.

Therefore, a personalized approach to dietary recommendations is crucial. By comprehensively evaluating the impact of a high-fat, high-protein diet on cardiovascular health, individuals can make informed decisions about its suitability for their specific health and wellness goals. The subsequent sections will further explore the effects of this dietary pattern on other critical aspects of well-being.

7. METABOLIC HEALTH AND BLOOD SUGAR

A high-fat, high-protein diet can have both positive and negative effects on metabolic health and blood sugar regulation. On the positive side, a diet rich in healthy fats (like those from avocados, nuts, and fatty fish) can promote satiety and help stabilize blood sugar levels. Additionally, adequate protein intake is crucial for muscle maintenance and overall metabolic function. However, an excessively high intake of saturated or trans fats, common in some high-fat diets,

can contribute to insulin resistance and negatively impact blood sugar control. It's important to focus on healthy sources of fat and protein and balance them with a variety of nutrient-rich foods. Remember, individual responses to diets can vary, and consulting with a healthcare professional or registered dietitian can provide personalized guidance for optimal metabolic health and weight management.

8. POTENTIAL BENEFITS

1. Satiety and Reduced Appetite: High-fat and high-protein foods can promote feelings of fullness, potentially leading to reduced calorie intake.
2. Muscle Preservation: Adequate protein intake supports muscle maintenance, which can be important for overall health, especially during weight loss.
3. Metabolic Health: Healthy fats like those from avocados and fatty fish can support metabolic function and may improve lipid profiles.
4. Improved Blood Sugar Control: A balanced intake of healthy fats and protein can help stabilize blood sugar levels.
5. Weight Loss: Some studies suggest that high-fat, high-protein diets may lead to greater weight loss, especially in the short term.

CONCERNS:
1. Nutrient Imbalance: Relying heavily on fats and proteins might lead to nutrient deficiencies if the diet lacks a variety of fruits, vegetables, and whole grains.
2. Potential for High Saturated Fat Intake: If not managed properly, a high-fat diet can lead to excessive intake of saturated fats, which may raise cholesterol levels and contribute to heart disease.
3. Digestive Issues: Some people may experience digestive discomfort when transitioning to a diet high in fat and protein.
4. Long-Term Sustainability: High-fat, high-protein diets can be challenging to sustain over the long term due to potential monotony and social limitations.
5. Individual Variation: What works well for one person may not work for another due to individual metabolic differences.

It's important to note that balance is key. Incorporating a wide range of nutrient-dense foods is generally recommended for overall health. Consulting a healthcare professional or registered dietitian before making significant dietary changes is always advised. They can provide personalized guidance based on individual health goals and needs.

9. LONG-TERM SUSTAINABILITY AND ADHERENCE

To a high-fat, high-protein diet can be both a strength and a challenge.

STRENGTHS:
1. Satiety and Reduced Cravings: The satiating effects of fats and proteins may help individuals feel fuller for longer, potentially reducing cravings and promoting adherence.

2. Preservation of Lean Muscle Mass: Adequate protein intake supports muscle maintenance, which is important for long-term health and weight management.
3. Improved Metabolic Health: When healthy sources of fats and proteins are emphasized, this can lead to positive effects on metabolic markers, which can contribute to overall health.

CHALLENGES:
1. Dietary Restriction and Variety: A high-fat, high-protein diet can be restrictive, potentially leading to monotony and limiting food choices. This may make it harder to sustain over the long term.
2. Social and Practical Considerations: Adhering to this diet in social situations or when dining out can be challenging. It may also require more planning and preparation.
3. Potential Nutrient Deficiencies: If not carefully planned, a diet high in fats and proteins may lack essential nutrients found in a diverse range of fruits, vegetables, and whole grains.
4. Potential Health Risks: Depending on the types of fats consumed, there may be an increased risk of certain health issues, like heart disease, if the diet is not balanced.

10. PRACTICAL RECOMMENDATIONS

For incorporating a high-fat, high-protein diet into your lifestyle while considering its impact on health and weight management:
1. Choose Healthy Fats: Focus on sources of healthy fats like avocados, nuts, seeds, olive oil, and fatty fish. These provide essential nutrients and are associated with improved metabolic health.
2. Prioritize Lean Proteins: Opt for lean sources of protein such as poultry, fish, lean cuts of meat, tofu, tempeh, legumes, and low-fat dairy. These options provide essential amino acids without excessive saturated fats.
3. Balanced Plate: Aim for a balanced plate with a combination of lean protein, healthy fats, and a variety of colourful vegetables. This helps ensure you're getting a wide range of nutrients.
4. Include Fibber-Rich Foods: Incorporate high - fibre foods like whole grains, fruits, and vegetables to support digestion and provide sustained energy.
5. Portion Control: Be mindful of portion sizes, especially with high-fat foods, as they are calorie-dense. Balance is key for effective weight management.
6. Limit Processed Foods: Minimize processed and fried foods, as they often contain unhealthy fats and excessive sodium.
7. Stay Hydrated: Proper hydration is important for overall health and can help support metabolic function.
8. Regular Physical Activity: Combine your dietary choices with regular exercise to promote overall health and support weight management.
9. Monitor Blood Sugar Levels: If you have concerns about blood sugar regulation, consider monitoring your levels regularly and consult a healthcare professional for personalized advice.
10. Seek Professional Guidance: Consulting a registered dietitian or healthcare provider can provide personalized recommendations based on your specific health goals, preferences, and any underlying health conditions.

11. Long-Term Sustainability: Focus on creating a sustainable eating pattern that you can maintain over the long term. This could involve periodic adjustments to meet your changing needs and preferences.

Remember, individual responses to diets vary, so it's important to find an approach that works best for you. These recommendations provide a general guideline, but tailored advice from a healthcare professional or registered dietitian is invaluable for optimizing your health and weight management journey

11. FUTURE RESEARCH DIRECTIONS

Future research on the impact of a high-fat, high-protein diet on health and weight management could focus on several key areas:

1. Long-term Effects: Conducting extended studies to observe the sustained effects of such a diet on metabolic health, cardiovascular health, and weight maintenance over several years.

2. Individual Variability: Investigating the variability in responses among individuals, considering factors like genetics, gut micro biota composition, and pre-existing health conditions.

3. Nutrient Composition: Exploring the specific types and sources of fats and proteins that have the most beneficial effects on health and weight, as not all fats and proteins are created equal.

4. Effects on Muscle Mass: Assessing how a high-protein diet affects lean muscle mass, physical performance, and overall body composition in different populations.

5. Micronutrient Intake: Analysing whether a high-fat, high-protein diet provides adequate levels of essential vitamins and minerals, and whether supplementation may be necessary.

6. Psychological Aspects: Investigating the psychological impact of adhering to this type of diet, including its sustainability, potential for food cravings, and its influence on mental well-being.

7. Combination with Exercise: Studying how combining a high-fat, high-protein diet with various exercise regimens affects overall health, performance, and body composition.

8. Impact on Specific Health Conditions: Examining how this diet might influence specific health conditions such as diabetes, metabolic syndrome, and neurodegenerative diseases.

9. Gut Micro biome Interactions: Understanding how this diet affects the composition and diversity of the gut micro biota, and how this, in turn, influences overall health.

10. Risk Factors and Cautions: Identifying potential risks or contraindications associated with adopting a high-fat, high-protein diet, particularly for certain populations or individuals with specific health concerns.

11. Sustainable Dietary Practices: Investigating the environmental impact and sustainability of a diet high in animal-based fats and proteins, and exploring alternative protein sources.

12. Cultural and Societal Aspects: Considering how cultural, economic, and societal factors influence the adoption and adherence to high-fat, high-protein diets in different regions and communities.

These research directions could provide valuable insights into the long-term effects and potential benefits or drawbacks of a high-fat, high-protein diet on health and weight management.

CONCLUSION

In conclusion, the studies on the impact of a high-fat, high-protein diet on health and weight management have provided valuable insights into its effects. It is evident that this dietary

approach can yield positive outcomes, particularly in terms of satiety, muscle preservation, and potential improvements in certain metabolic markers.

However, it is crucial to note that individual responses to this diet vary, and factors such as genetic predisposition, existing health conditions, and gut microbiota composition play significant roles. Long-term studies are essential to better understand the sustained effects and potential risks associated with this dietary pattern.

Additionally, the specific types and sources of fats and proteins, as well as micronutrient adequacy, must be considered when implementing such a diet. Psychological aspects, including adherence and potential impacts on mental well-being, warrant further exploration.

Furthermore, research should focus on the combination of a high-fat, high-protein diet with exercise regimens, as well as its potential benefits or risks for specific health conditions. Environmental sustainability and cultural considerations also merit attention in evaluating the broader implications of this dietary approach.

Overall, while a high-fat, high-protein diet shows promise in certain aspects of health and weight management, comprehensive and nuanced research is necessary to provide tailored recommendations and to address potential concerns for diverse populations. This evolving field of study holds great potential for informing personalized dietary strategies in the pursuit of improved health outcomes.

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THE ROLE OF PHYSICAL EDUCATION IN ENHANCING SOCIAL AND EMOTIONAL DEVELOPMENT IN EARLY CHILDHOOD

SOMDUTT TYAGI
DR. URVESH SHARMA
JAKIA ALI

ABSTRACT:

Focusing on the connections between moving about, interacting with other people, and feeling good about oneself, this research hopes to shed light on the significant part physical education may play in fostering healthy social and emotional development in young children. Secondary analysis, including structural equation modelling (SEM) and regression analysis, is used to compile the study's findings. There were 200 people in the sample. The authors of this research highlight the favourable association between kids' physical exercise and their overall mental health. The study highlights the significant impact of early childhood physical education on long-term decision-making, which has important implications for educators, policymakers, and parents. The provided insights highlight the importance of recognising the interdependence between a child's physical and emotional well-being in their developmental journey. Additionally, they offer valuable guidance for designing educational programmes that can effectively support children's holistic growth. The findings highlight the significance of comprehensive approaches to early childhood education. They emphasise how physical well-being, emotional development, and self-concept are interconnected and play a crucial role in a child's overall growth. For those concerned with children's growth and education, these findings have profound implications.

Keywords: physical education, social development, emotional well-being, and physical activity.

INTRODUCTION

In the current body of scientific knowledge, the activity of providing preschool children with physical education receives a significant amount of focus and consideration.In the meanwhile, forward-thinking programmes are being devised, and cutting-edge technology are being implemented. Children need to exercise often not simply to keep their weight in check, but also to develop healthy habits that will last a lifetime. but it also delivers a wide variety of additional physiological, psychological, and social advantages.It has been widely acknowledged for an extended period of time that participating in consistent, Adults and teenagers who engage in vigorous physical exercise get psychological advantages, including relief from depression and other mood disorders, improved mental health, less stress, and higher self-esteem.(Wang, 2022).It is evident that public health measures to promote physical activity should focus on physical education programming in schools, but it is also obvious that these programmes cannot fix the problem on their own. Successful population-level promotion of physical activity that has a significant, beneficial impact on people's health and quality of life needs coordinated efforts on

many fronts, not only schools but also homes, neighbourhoods, clubs, and government programmes(Solmon, 2015).

1.1 Importance of Physical Education

Individuals, especially children and adolescents, benefit immensely from the inclusion of physical education (PE) as a central component of their overall growth and development. It is essential for the promotion of cognitive growth, physical fitness, and the overall health of a person's social and emotional life. Physical education programmes provide students chances for physical exercise, which may help them acquire basic movement abilities and form good living habits(Taras, 2005). This contributes to an overall improvement in students' health. In addition, engaging in physical activity on a consistent basis has been associated with improvements in cognitive function as well as academic success. In addition, physical education encourages good social interactions, collaboration, cooperation, and communication skills, which in turn promotes social inclusion, respect of diversity, and positive social identities. The value of physical education in various spheres is backed up by research, which highlights how essential it is to include PE into educational programmes(Telama et al., 2005).

1.2 Physical Activities and Social Bonding:

Young children benefit tremendously from participating in physical education programmes because these activities provide a conducive environment for the development of social skills and the establishment of lifelong connections. Participating in a wide range of physical activities within the context of physical education helps to foster social connection by fostering qualities such as collaboration, cooperation, and mutual respect(Hastie et al., 2011).Children gain valuable life skills such as the ability to communicate effectively, the value of cooperation and sharing, and the relevance of respecting the personal space of others as they participate in collaborative activities, team sports, and interactive games(Burns et al., 2019).Team sports, in especially, develop a feeling of camaraderie in youngsters as they work together towards shared objectives, enjoying successes and jointly learning from setbacks.These shared experiences promote a feeling of feeling of community and belonging among youngsters, establishing connections that continue beyond the PE class(Daniels et al., 2019).Furthermore, physical activities often include activities such as partner exercises as well as group challenges, which need trust and dependence on one another(Eather, Narelle, Morgan, Philip J, Lubans, 2016).Children who participate in these activities acquire a strong feeling of trust in their classmates, which strengthens their social relationships. Children not only learn how to work together in this supportive setting, but they also acquire empathy and understanding, which are key skills for developing meaningful and enduring friendships. Physical activities in the framework of PE therefore not only promote physical health but also foster the social fabric upon which good connections and social skills are sewn, laying the groundwork for a child's healthy social development.

1.3 Emotional Regulation and Physical Education:

Within the controlled boundaries of physical education (PE), emotional regulation, a cornerstone of emotional and social growth, finds a caring base. Children are given a secure atmosphere in PE lessons to express a range of emotions, from delight to frustration, and are guided in regulating

their feelings constructively(Herbert et al., 2019).By including practises such as yoga & mindfulness exercises, physical education provides kids with vital skills for managing their emotions. Yoga improves self-awareness by focusing on focused breathing and regulated breathing, which helps kids recognize and comprehend their emotional states(Meiklejohn et al., 2012).Through practicing mindfulness, kids may learn to examine their thoughts and emotions without acting impulsively and to live in the present now.Additionally, physical education promotes emotional expression via games and conversations in groups, providing kids with the language they need to communicate their emotions clearly(Greenberg & Harris, 2012).In PE, learning to control one's emotions fosters resilience in addition to coping skills.Youngsters who possess the ability to regulate their emotions confidently approach social situations, increasing their emotional intelligence and fostering beneficial connections(Brackett et al., 2012).These PE-honed abilities provide a strong basis for negotiating the intricacies of relationships and emotions in the larger social sphere.

1.4 Building Self-Confidence and Self-Esteem:

Children's self-esteem and confidence are boosted greatly when they participate in physical education (PE) courses that include physical exercises into the curriculum. When kids try new things and accomplish challenging goals, they develop a healthy feeling of self-worth, such as becoming proficient in team sports or acquiring new skills, and they discover that hard work and persistence pay off [BSS-1].They may take chances and go outside of their comfort zones in the encouraging environment of physical education programmes, which helps kids develop a feeling of self-efficacy. Their increased self-assurance from PE not only helps students in the gym but also influences how they see themselves in other social contexts and throughout their everyday life. Having confidence in one's physical capabilities helps youngsters feel better about themselves generally, which affects how they interact with peers and adults in authority. It also helps them establish a good self-image that affects many areas of their life and eventually contributes to their holistic development. [BSS-2]

1.5 Inclusivity and Empathy in Physical Education:

Physical education (PE) is a shining example of inclusion because it creates a setting where people with different needs and talents are not only accepted but also appreciated. Children in inclusive physical education settings go on a life-changing road of empathy and acceptance, understanding and appreciating disparities in physical ability(Colombo-dougovito et al., 2017).Interacting with peers of different skill levels turns into a potent lesson in empathy and justice. Children get a deep feeling of empathy through these experiences, understanding the particular struggles that their classmates endure. This first-hand understanding destroys stereotypes and fosters an inclusive culture where people value differences and accept them. A generation that cherishes diversity and inclusion is shaped through inclusive physical education, which serves as the furnace in which the principles of comprehension, acceptance, and empathy are forged. This foundational work of healthy social attitudes that transcend the gymnasium is laid(Haegele et al., 2017).

1.6 Conflict Resolution and Peer Relationships:

Children participate in physical activities and learn critical social skills, such as how to resolve conflict and build positive peer relationships, in the dynamic field of physical education (PE). Exercise programmes, which are often focused on collaboration and teamwork, inevitably lead to confrontations, giving kids priceless chances to hone important interpersonal skills.Under the direction of teachers, kids pick up skills in resolving conflicts, reaching agreements, and accepting compromises, which paves the way for positive conflict resolution techniques that are essential for their relationships in and out of the classroom. Playing organized games and team sports helps kids learn the virtues of sportsmanship, fair play, and respect for others in a microcosm of real-life social dynamics.These encounters teach students the value of empathy, comprehension of other viewpoints, and respect for the accomplishments of their peers in addition to dispute resolution skills. These abilities, developed in the PE classroom, penetrate many facets of their life, encouraging a climate of respect and collaboration amongst people and influencing their social behaviours in a constructive way(Pill et al., 2012).

In a nutshell, it shows how crucial Physical Education is to kids' psychological and social growth throughout their early years. This chapter emphasizes the importance of PE in developing well-rounded persons by emphasising its complex character, which goes beyond physical activities to include emotional intelligence, empathy, and interpersonal skills. The next sections will go further into certain components, offering a detailed knowledge of how PE impacts early learners' social and emotional abilities, contributing considerably to their holistic development and laying the groundwork for lifetime success.

1.7 Aimofthestudy

The purpose of this study is to better understand and explore the critical role that physical education plays in promoting early childhood social and emotional development. With an emphasis on the relationship between physical activity, social relationships, and mental health, this research attempts to provide light on the ways in which organized physical education programmes may support young children's development in a comprehensive way.

1.8 Objectives

1. To examine the theoretical foundations that underpin the connection between physical education and social-emotional development in early childhood.
2. To assess the impact of various types of physical activities on the development of social skills, including cooperation, communication, and teamwork, in young children.
3. To investigate the relationship between physical play, emotional expression, and the development of emotional regulation skills in early childhood.
4. To investigate the impact of early childhood physical education on long-term lifestyle choices

1.9 Hypothesis

- H1: There will be a significant relationship between engagement in physical activities and improved emotional well-being in young children.

- H2: There will be a significant impact of early childhood physical education on long-term life choices.
- H3: Physical self-concept will mediate the positive impact of physical education on social development in early childhood.
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1.10 ORGANIZATION OF PAPER

This paper is further organizing into: In section-2 we discussed various Comprehensive Literature Review and their limitations, The research strategy and methodologies used in this study were explained in Section 3, while the paper's results are presented in Section 4, and Section-5 Conclusion offers a summary of the study's key-points and insights.

LITERATURE REVIEW

Author name & Year	Title	Method	Result	Limitations
(Demchenko et al., 2021)	Preparing the Fitness Instructors of Tomorrow Facilitators of Professional Work in an Inclusive School Setting	create and empirically validate a technique It caters to the unique theoretical, practical, and psychological demands of future PE teachers so that they may succeed in inclusive classrooms.	The experiment findings demonstrate the efficacy of implementing method developed to prepare aspiring PE teachers for careers teaching students with a wide range of abilities.	The research has certain limitations, such as a small sample size and a short-term evaluation that might have missed larger contextual variations, unique teacher experiences, and resource limitations, all of which could have an effect on the training methodology's long-term applicability and efficacy in inclusive education spaces.
(Gu et al., 2016)	School-aged children's levels of physical activity,	'PA (self-reported PA, pedometer-based PA) as well	Positive correlations were found	The research does not investigate

	fitness, and the quality of their lives in terms of health	as physical health (cardiorespiratory fitness, strength in the muscles, flexibility, & body composition) were tested in the autumn.	between PA and the four measures of physical fitness and cognitive performance. Path analyses revealed that the relationship between self-reported PA and HRQOL was mediated by physical fitness.	socioeconomic characteristics or possible confounding variables, It hinders the extent to which we are able to draw conclusions about the relationship between kids' fitness, health, and school performance.
(Reunamo et al., 2014)	Children's physical activity in day care and preschool	The research methodologies used were systematic observation, skill appraisal of youngsters, and kid interviews. In connection to PA, Vygotsky's idea of the "zone of proximal development" is revised.	The study's findings indicate that contextual influences, notably peers, do have a substantial impact in increasing PA among youngsters.	This research ignores cultural differences in children's physical activity and individual reactions to teacher-initiated activities, limiting its findings.
(Olive et al., 2021)	Physical exercise and social-emotional learning: the after-school program's impact	The Physical Activity and Learning (PAL) Programme, an ASP, was the main subject of this quasi-experimental design research.	Because of the short duration and elevated baseline SELS scores, the 4-week SECD intervention resulted in moderate increases in character development abilities.	Self-reporting and assessment instrument reading level differences may impair the study's validity. The results are further limited by the small sample size of underprivileged

				adolescents at two schools.
(Molanorouzi et al., 2015)	Activity, age, and sex all play a role in why adults get moving. The social context of health behaviour and health promotion	We used a descriptive, quantitative, cross-sectional approach to our study. A total of 1,360 persons (703 males, 657 females) who had exercised regularly for at least six months were surveyed using the Physical Activity and Leisure Motivation Scale (PALMS).	The outcomes of this research reveal revealed vital and powerful reasons to exercise changed with age, gender, and the kind of activity pursued.	This study's convenience sample lacks control over individuals' exercise levels, making comparisons with prior research difficult. Systematic sampling, including participation levels, and cluster analysis for motive-based activity classifications are needed in future study.
(Wathu, 2016)	Preschoolers' play has a significant impact on their social and emotional development in Kyangwithya zone, Kitui county.	Sampling uses stratified and basic random methods. A pilot research validated questionnaires and Observation Checklists. Data analysis involves cross-examination, presenting frequencies and percentages.	The research showed that play materials motivated toddlers' social and emotional development. For youngsters, more playtime, teacher participation, and different play styles promoted social and emotional development.	Limitations include social desirability bias, sample geographical specificity, and self-reporting, It may not be able to convey the whole complexity of children's social and emotional lives. The localized emphasis may limit the application of the results.

(Ho, 2013)	A case study of a physical education teacher's implementation of a social and emotional learning curriculum	Methodologically, the investigation was carried out in the form of a qualitative action research case study.	This research also provided some insight into the need of providing teachers with proper pedagogical expertise, resources, and training in order for them to implement a successful SEL curriculum	SEL must be included into the standard educational plan (formal, organized curriculum). Maybe the real question in this instance isn't whether to use SEL or not, but rather how much or how frequently? Even if he recognizes that SEL has importance, it is still important to investigate how much of the official school
(Gil-Moreno & Rico-González, 2023)	A Comprehensive Analysis of the Role of PE in Developing Children's Social and Emotional Competence	For raising the emotional intelligence of preschool-aged children, Compared to traditional psychomotor instruction, the dynamic approach seems to be more useful.	Given this, physical education classes in preschool may benefit children's development of emotional competence throughout their formative years of schooling.	A restricted number of included studies, probable exclusion of contemporary research, methodological heterogeneity, a lack of cultural inquiry, and no meta-analysis limit the study's breadth, reliability, and generalizability.
(Breen, 2018)	A Delphi Study on Teaching Children Social and Emotional Competencies	The Delphi technique was employed in this research, which is an iterative	This study found that the following instructional strategies good	More research is needed to establish the positive impacts of social and

		approach for collecting and distilling expert judgements via a series of questions interleaved with feedback.	interactions, modelling, role play, quiet space, naming emotions, and group time are all helpful ways to teach preschoolers empathy and emotion management. The paper offers implementation advice for these techniques.	emotional training in a variety of situations and with various age groups, particularly with pre-schoolers.
(Ang, 2015)	The Contextualised Appropriation of Sport Education for Social and Emotional Learning in P.E.	For the purpose of gathering qualitative information for the study, an approach known as the critical ethnographic case study method was used across the course of four separate research cycles.	The results of the research serve to shed light on the complicated process of developing a physical education curriculum that incorporates social and emotional learning and is based on sport education.	In addition, there are suggestions for pedagogy and professional development for teachers, as well as suggestions for further research that might expand on the findings of the present study.

2.1 Research Gap

The existing research in physical education and social-emotional development emphasizes important areas while also revealing significant gaps. The paucity of varied samples in studies on inclusive education impedes a thorough understanding of long-term consequences. Socioeconomic aspects are often overlooked in research on children's health-related quality of life, necessitating more complex analysis. Cultural implications on physical activity are still being investigated, necessitating more wide and comprehensive study approaches. Furthermore, there are no standardized methodologies for implementing social-emotional learning programmes, necessitating further research for optimum approaches. A thorough, diversified, and standardized

approach to these topics is critical for increasing theoretical knowledge as well as practical applications in educational settings.

Contribution of the study

Our study looks at how PE classes affect kids' psychological and interpersonal growth, thereby providing substantial contributions to the fields of education, psychology, and child development. This programme provides educators with strategies supported by empirical evidence, promotes the incorporation of structured physical education programmes into early childhood curricula, empowers parents to provide comprehensive support, and underscores the interdependence of cognitive, emotional, and social development in order to cultivate individuals who are well-rounded.

METHODOLOGY

Methods for studying the potential positive effects of PE on kids' psychological and interpersonal development are outlined in this section. This research aims to better understand the impact of pre-school physical education programmes on the mental and social development of young children. A detailed discussion is held on the study design, participants, data gathering techniques, and data analysis methodologies.

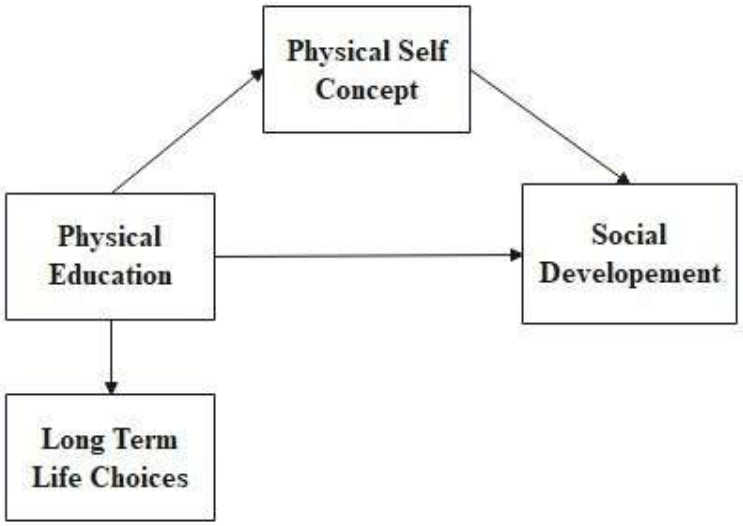

FIGURE-1 CONCEPTUAL FRAMEWORK

3.1 RESEARCH DESIGN

In order to give an appropriate answer to the research problem that has been carried out up to this point, the research design for this study is consisted of a number of procedures and strategies that were formed to logically integrate numerous research components. These procedures and strategies were designed to provide a suitable response to the research issue. The purpose of this chapter is to provide information about the research methodologies that were employed in the inquiry that is being discussed in this chapter. The design of the study will decide the procedures that are used for doing the research, the analysis of the data, and the collection of the data.

3.2 SAMPLING SIZE AND SAMPLING TECHNIQUE

3.2.1 SAMPLING SIZE

A sample size of 200 participants will be chosen for this research in order to examine how physical education might improve early childhood social and emotional development. This sample size was chosen after considering resources, practicality, and the need for statistical power in order to identify significant effects. The study's ability to draw credible conclusions and the findings' application to the early childhood education community are both enhanced by a larger sample size.

3.2.2 SAMPLING TECHNIQUE (RANDOM SAMPLING)

Each member of the population must be given an equal and independent probability of being picked for a sampling approach to be termed random. It ensures that all participants are accurately portrayed and expands how broadly the research's findings may be applied. Participants are often selected using random numbers or tables, which helps to reduce the possibility of selection bias and improves the validity of the research.

3.3 DATA COLLECTION

The research will include questionnaires, pre- and post-assessments, organized observations, and interviews. Families and teachers will be surveyed and asked about the emotional and social growth of kids. Pre- and post-intervention standardized examinations will evaluate social and emotional abilities. In physical education classrooms, structured observations will record real-time interactions with others and emotions. To get qualitative perspectives, teachers, parents, & physical education instructors will be interviewed in-depth. Our multi-method approach guarantees a complete knowledge of how physical education affects early childhood social and emotional development.

3.4 INCLUSION CRITERION & EXCLUSION CRITERION

3.4.1 Inclusion Criterion

The inclusion criteria were instructors and parents of young children attending secondary high schools who voluntarily gave informed permission, demonstrating their active participation and adding a variety of views from the perspectives of both the educational and parental domains to the research.

3.4.2 Exclusion criterion

The study's exclusion criteria comprised parents and instructors of young children enrolled in secondary high schools who indicated a lack of interest in participating. Furthermore, participants who were not present at the designated site throughout the duration of data collection were omitted.

3.5 DATA ANALYSIS

In this study, we used an in-depth data analysis strategy to probe the many relationships between factors influencing kids' social and emotional growth. In order to thoroughly investigate these

associations, three sophisticated statistical techniques were applied: structural equation modelling (SEM), regression analysis, as well as correlation analysis. The selection of these analytical methods was predicated on their capacity to unveil both explicit and implicit connections between the variables under investigation, thereby furnishing a more intricate comprehension of the elements that impact social and emotional growth within the realm of early childhood education.

3.5.1 Correlation Analysis

Correlation analysis, a key tool in our research, extensively dissects the correlations between several factors influencing young children's social as well as emotional development. This analysis reveals not only the existence of linkages, but also their strength and direction. Positive correlations highlight synergies, highlighting places where progress in one area catalysis progress in another. Negative correlations, on the other hand, identify possible stumbling blocks and guide solutions. Educators receive specialized insights by measuring these correlations, allowing focused interventions in classrooms. These complex relationships have far-reaching repercussions. Educators who are equipped with this information may optimize teaching by emphasising activities that build good connections and addressing impediments to child growth. Policymakers may create policies that promote comprehensive early education if they are informed by these relationships. Parents, too, see importance in creating home situations that foster strong relationships. Correlation analysis, in unravelling these complexities, offers us with actionable knowledge, laying the groundwork for kids' social and emotional development.

3.5.2 Regression Analysis

Regression analysis, a critical statistical method in our study, examines how many variables affect the mental and emotional development of toddlers and preschoolers. We get useful insights into the links between independent and dependent variables by analyzing these predictors. We discover which variables have a substantial effect on social and emotional abilities using regression models, offering a more comprehensive view. This technique quantifies the amount and direction of these impacts, which aids in the identification of significant drivers. Educators may use these data to improve teaching practises by concentrating on important elements. Policymakers obtain strategic advice for developing focused initiatives that promote holistic child development. Armed with predictive insights, parents may establish supportive home settings that coincide with characteristics important for their children's social and emotional development. Our research uses regression analysis to transform complicated data into actionable insight, enhancing collaborative efforts to develop well-rounded, emotionally intelligent persons.

3.5.3 Structural Equation Modeling (SEM)

In this research, structural equation modelling (SEM) is used as a sophisticated analytical framework to provide a comprehensive understanding of the intricate web of interactions that shape social and emotional development in young children. SEM, in contrast to previous approaches, includes both measuring and structural components, providing a holistic approach. SEM reveals hidden patterns by illuminating latent variables and their observable indicators, revealing direct and indirect effects among components. This strategy allows us to evaluate theoretical models while also providing in-depth insights into causal links. SEM allows for a more detailed investigation of how many factors like as parental engagement, peer relationships, and classroom dynamics interact, revealing insight on the subtle dynamics of early childhood development. Our research not only deciphers these links but also confirms theoretical

frameworks, expanding our knowledge of the many processes that contribute to social and emotional development.

3.6 TOOLS UTILIZED

SPSS Statistics as well as AMOS were useful tools for data analysis in this investigation. SPSS was used for correlation and regression analyses, while AMOS was used for advanced Structural Equation Modelling (SEM), allowing for a thorough investigation of early childhood social and emotional development aspects.

3.6.1 SPSS

SPSS Statistics was used as the foundation for the correlation and regression analysis in this study. Its comprehensive characteristics enabled for a thorough investigation of variable connections, measuring correlations, and finding key predictors. SPSS provides a statistical framework, allowing for accurate insights into the intricate dynamics of early children's social and emotional development.

3.6.2 AMOS (ANALYSIS OF MOMENT STRUCTURES)

AMOS, a specialized tool for Structural Equation Modelling (SEM), was critical in this research. AMOS offers a comprehensive framework for verifying theoretical models and studying causal linkages among multiple elements by combining measurement and structural components. Its sophisticated capabilities shed light on hidden factors and their visible indications, allowing for a better understanding of the subtle linkages that influence social and emotional development. The complex analyses performed by AMOS enhanced the study's results, increasing the total depth of knowledge in the area of early childhood education.

3.7 ETHICAL CONSIDERATIONS

Ethical concerns were given top priority in the study process in order to protect the rights, welfare, and privacy of all participants. Parents, educators, and other interested parties were carefully asked for their informed permission, which included a detailed explanation of the goals, methods, and possible consequences of the research. All participants were assured they may stop participating at any moment without any repercussions. Strict adherence to confidentiality protocols guaranteed respondents' privacy and protected their private data. Furthermore, throughout the study procedure, participants' dignity and cultural variety were respected. Strict adherence to ethical norms and procedures promoted a trustworthy atmosphere and preserved the integrity of the study's conclusions.

RESULTS AND CONCLUSION

4.1 DATA ANALYSIS

Demographic Variable

TABLE 9 DEMOGRAPHIC TABLE

GENDER				
	Frequency	**Percent**	**Mean**	**Std. Deviation**
Male	101	50.5	1.495	0.501

Female	99	49.5		
Total	200	100		
AGE				
	Frequency	**Percent**	**Mean**	**Std. Deviation**
18 - 22 Years	64	32.0	2.030	0.820
23 - 27 Years	66	33.0		
28 – 32 Years	70	35.0		
Total	200	100.0		
EDUCATION				
	Frequency	**Percent**	**Mean**	**Std. Deviation**
Graduated	57	28.5	2.025	0.773
Post Graduated	81	40.5		
Above Post Graduated	62	31.0		
Total	200	100.0		

Table 1 presents the demographic data pertaining to the gender of the individuals involved in the study. The sample size consisted of 200 individuals, with 101 of them being male. This means that males accounted for 50.5% of the respondents. The gender variable has a mean of 1.495, suggesting a slight inclination towards the male gender. The data points have a standard deviation of 0.501, indicating that they are relatively close to the mean. Table also presents the age distribution of the participants. The sample size is 200 individuals. The age groups are classified as "18 - 22 Years," "23 - 27 Years," and "28 – 32 Years." The category with the highest frequency is "28 – 32 Years," which consists of 70 participants, accounting for 35.0% of the sample. The calculated mean age of 2.030 suggests that the age groups are fairly evenly distributed. The calculated standard deviation of 0.820 indicates that there is a noticeable amount of variation in the data points from the mean. Table 1 further provides insights into the educational qualifications of the study participants. The data is categorised into three groups: "Graduated," "Post Graduated," and "Above Post Graduated." The category with the highest percentage of participants is "Post Graduated," accounting for 40.5% of the sample, which is equivalent to 81 individuals. The average educational level is 2.025, suggesting a slight preference for postgraduate education. The standard deviation of 0.773 indicates that there is a certain level of variability in the educational qualifications of the participants. This suggests that the participants have a diverse range of educational backgrounds.

H1:There will be a significant relationship between engagement in physical activities and improved emotional well-being in young children.

TABLE 10 CORRELATIONS

		Engagement Physical Activities	Emotional Wellbeing
Engagement Physical Activities	Pearson Correlation	1	.214**
	Sig. (2-tailed)		.002
	N	200	200
Emotional Wellbeing	Pearson Correlation	. 214**	1
	Sig. (2-tailed)	.004	
	N	200	200

The correlation analysis demonstrates a statistically significant association between engagement in physical activities (Engagement Physical Activities) and emotional well-being (Emotional Wellbeing) in young children. The Pearson Correlation coefficient of 0.214** suggests a positive correlation between engagement in physical activities and emotional well-being. This means that as individuals participate in more physical activities, there is a tendency for their emotional well-being to improve.

The correlation's significance level (Sig. 2-tailed) is reported as 0.002, indicating that it is statistically significant at a level lower than the commonly used threshold of 0.05. The use of the ** notation indicates that the correlation has a significant level of 0.01 (2-tailed), which highlights the robustness of this relationship.

The results indicate a strong correlation between kids' engagement in physical activities and their increased sense of emotional well-being. The finding suggests that promoting physical activity in young children can have positive effects on both their physical health and emotional development.

H2: There will be a significant impact of early childhood physical education on long-term life choices.

TABLE 11 MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.452[a]	.523	.418	.72821
a. Predictors: (Constant), Physical Education				

Table 2 presents a comprehensive overview of the model employed for examining the correlation between early childhood physical education and long-term life choices. The correlation coefficient, denoted as "R", has been calculated to be 0.452, this value suggests the presence of a moderate positive relationship between the variables. The R Square value, with a value of 0.523, indicates that around 52.3% of the variability in long-term life choices can be accounted for by the predictor variables. The value of "Adjusted R Square" is 0.418, indicating a decrease in the model's goodness of fit when considering the number of predictors.

TABLE 12ANOVAA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.489	1	2.489	4.694	.031[b]
	Residual	104.997	198	.530		
	Total	107.486	199			
a. Dependent Variable: Long Term Life Choices						
b. Predictors: (Constant), Physical Education						

In Table 3, we can see the results of an ANOVA performed on the regression model. The "Sum of Squares" provides a measure of the overall variability, with 2.489 being accounted for by the regression model and 104.997 being attributed to residual error. The degrees of freedom for the regression model is 1, indicating that there is one independent variable being used to predict the dependent variable. The "Mean Square" value for the regression is 2.489, This represents the typical squared deviation between forecasted and observed values. This value is used to calculate the F-statistic, which is 4.694 in this case. The F-statistic evaluates how significant the regression model is as a whole. The regression model has a p-value of 0.031, which is less than the commonly accepted threshold of 0.05. This demonstrates the validity of the regression model. It is implied that there is a strong link between kids' exposure to physical activity at a young age and their decision-making habits as adults.

TABLE 13COEFFICIENTSA

Model				Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.915	.272		14.409	.000
	Physical Education	.154	.071	.152	3.167	.031
a. Dependent Variable: Long Term Life Choices						

The coefficients of the regression model are presented in Table 4. The coefficient for the "Constant" variable is 3.915, and it has a standard error of 0.272. The expected value of long-term life choices is being discussed in relation to a predictor variable of zero. The coefficient for "Physical Education" is 0.154, indicating a positive relationship. A coefficient estimate with a standard error of 0.071 indicates some scatter in the underlying data. The coefficient quantifies the impact of a one-unit change in the predictor variable (Physical Education) on long-term life choices. The "Beta" value, with a value of 0.152, represents the standardised coefficient. This coefficient enables the comparison of the predictor variable's effect strength in a relative manner. The calculated "t" statistic is 3.167, which suggests a strong relationship between Physical Education and long-term life choices. Additionally, the p-value of .031 indicates that this relationship is statistically significant.

The analysis emphasises the significance of early childhood physical education in promoting positive life choices and emphasises the potential long-term effects of these educational interventions. Researchers hope that teachers, legislators, and parents will all benefit from this study's results. It highlights the significance of incorporating well-organized physical education programmes into early childhood education. These programmes can play a crucial role in fostering and facilitating the development of children's decision-making abilities, ultimately influencing their life choices. Physical education has been shown to have positive effects on both present and long-term health, and this study sheds light on those effects.

H3:Physical self-concept will mediates the positive impact of physical education on social development in early childhood.

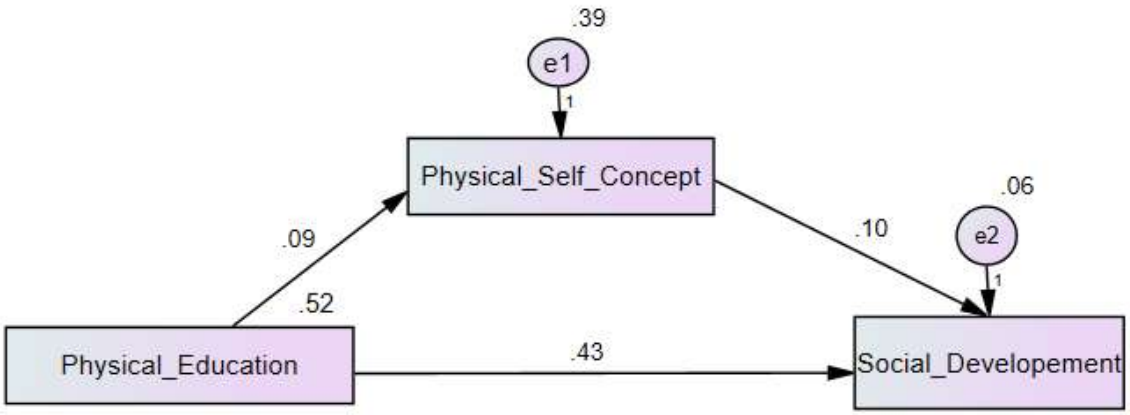

TABLE 14 REGRESSION WEIGHTS: (GROUP NUMBER 1 - DEFAULT MODEL)

PATH			Standardized	S.E.	C.R.	P
Physical Self Concept	<---	Physical Education	.090	.061	1.483	.013
Social Development	<---	Physical Education	.429	.025	17.169	***
Social Development	<---	Physical Self Concept	.096	.029	3.318	***

The table presents data on the regression weights that represent the relationships between variables in the mediation model. The study examines the relationship between "Physical Education" and "Social Development" in early childhood, specifically focusing on the mediating role of "Physical Self-Concept." The standardised coefficients, standardised errors, critical ratios (C.R.), and probability values for each route are all shown in the mediation model.

The importance of physical education on one's sense of bodily identity is the subject of this paper. The standardised coefficient of 0.090 indicates a small positive relationship between the variables. The standard error of 0.061 suggests that the estimate of the coefficient is relatively precise. The critical ratio (C.R.) of 1.483 is below the threshold for statistical significance, indicating that the relationship may not be significant. The p-value of 0.013 further supports this, suggesting that there is a 1.3% chance of observing such a relationship by chance alone. This line

of reasoning shows how P.E. classes might positively affect one's sense of body image. There is a statistically meaningful link between PE and Body Image if the correlation coefficient is positive. However, it must be stressed that the strength of this connection is low.

The standardised coefficient for the relationship between social development and physical education is 0.429. The standard error is 0.025, indicating the precision of the coefficient estimate. The critical ratio is 17.169, which is highly significant (***), suggesting a strong relationship between social development and physical education. The low p-value further supports the significance of this relationship. The evidence points to a significant positive relationship between PE and maturation in social skills. Physical education seems to have a positive effect on children's social growth, according to the evidence.

The correlation between social maturation and bodily self-perception is estimated to be 0.096 using a conventional correlation coefficient. This coefficient has a critical ratio of 3.318 and a standard error of 0.029. This line represents the connection between one's sense of social development and their sense of physical self-concept. The presence of a positive coefficient indicates that there is a statistically significant, albeit relatively weak, direct relationship between the two variables.

In conclusion, it is evident that the user's text lacks analytical content. Table 5 displays important data about the mediating effect of "Physical Self-Concept" between "Physical Education" and "Social Development" in preschoolers. The correlation between Phys. Ed. and self-perception in terms of physical ability was poor but statistically significant. The direct impact of Physical Education on Social Development is notable and statistically significant.The existence of a direct connection between Physical Education and Social Development, as well as physical self-concept's positive effect on social development is evidence that psc moderates the connection between phys ed and psych growth. In the end, these results are consistent with hypothesis (H3), which holds that physical self-concept mediates the beneficial effects of physical education on early childhood social development. The significance of taking a child's self-concept into account is highlighted in relation to physical education programmes that aim to improve their social development.

4.2 CONCLUSION:

The analyses and findings presented valuable insights into different aspects of early childhood development and education. Let us outline the main findings:

It's crucial to learn more about the link between working out and mental health. The correlation study shows that children's mental health improves significantly after they participate in physical activities. The Pearson Correlation coefficient of 0.214** suggests a positive relationship between children's engagement in physical activities and their emotional well-being. The significance of promoting physical activity in young children is emphasised by this finding, as it highlights the benefits it has on both their physical health and emotional development.

The regression analysis reveals that there is a noteworthy influence of early childhood physical education on the decisions individuals make throughout their lives. The coefficient for the variable "Physical Education" is 0.154, indicating a positive relationship. This coefficient is statistically significant, as evidenced by the p-value of .031, which is below the commonly used threshold of .05. The statement implies that early childhood physical education has a significant

impact on individuals' future decisions and career paths, highlighting the lasting effects of these educational interventions. There are substantial consequences for educators, legislators, and parents based on the findings of this research. They emphasise the significance of implementing structured physical education programmes in early childhood education.

The goal of this research is to analyse how "Physical Self-Concept" moderates the connection between "Physical Education" and "Social Development" in young children. The correlation between Phys. Ed. and self.-perception was shown to be statistically significant, but modest. Physical education has a large and statistically significant effect on students' ability to interact with others. According to the results, P.E. may have a positive effect on both children's physical self-concept and their social development. This highlights the importance of taking a child's self-concept into account when designing physical education programmes that aim to improve social development.

The findings presented in this study provide valuable insights into the significance of physical education, physical activity, and self-concept in the overall development of young children. The statement highlights the importance of adopting comprehensive approaches in early childhood education. These approaches should focus on fostering the development of both physical and emotional well-being. Additionally, it is crucial to consider the long-term effects that early education can have on the choices individuals make throughout their lives. The insights provided have significant implications for educators, parents, and policymakers who are involved in the design and implementation of educational programmes aimed at promoting the comprehensive development of children during their crucial formative years.

The outcomes discussed collectively highlight the significant value of implementing well-rounded approaches to early childhood education. The text emphasises the interconnection between physical well-being, emotional development, and self-concept in children's overall growth. The ramifications of this study's results for teachers, parents, and politicians are substantial. They highlight the importance of promoting physical, emotional, and social well-being during early childhood. By doing so, we can lay the foundation for successful and fulfilling future development.

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PHYSICAL LITERACY AND SPORTS PARTICIPATION

Lt. Dr. Shugnesh Chudasama
Assistant Director of Sports and Physical Education,
Gujarat national Law University, Gandhinagar

Today's time is the fastest time, and we all are busy and running for wealth. With the use of Internet all knows how to learn, what to learn. Literacy through website is really good and also easy to learn. Sometimes it's very easy to understand through internet. But in some area without physically presence it's really tough to understand. When we are talking about Physical Education there is Physical involvement is required at maximum side. Physical literacy is nothing but it gives the knowledge of developing the skills, knowledge, behaviors, and confidence to using the techniques and tactics, it also motivates to lead active lives.

Physical Literacy:

Physical literacy is described as the competence, confidence, and knowledge required to be physically active throughout life [1]. Physical literacy, as a multidimensional concept, has physical, social, cognitive, and affective domains which have been positioned as a health and disease determinant [2].

Canadian Sport for Life and PHE Canada

Canadian Sport for Life (2005) and Physical and Health Education (PHE) Canada (2011) offered another definition:

"Individuals who are physically literate move with competence and confidence in a wide variety of physical activities that benefit the healthy development of the whole person"

This means that physically literate people are able to:

- Develop the motivation and ability to understand, communicate, apply and analyse various forms of movement
- Demonstrate a variety of movements confidently and competently across a wide range of physical activities
- Make healthy, active choices that are both beneficial to and respectful of their selves, others and environment.

Importance of Physical Literacy in Sports Participation.

Physical literacy is an important factor which supports the person to be active. Without basic skills, knowledge and importance the person often become lazy and disengaged from sport and activity. And if participating they often invites injuries. The benefits of physical literacy means not only limited to physical health but also helps to choose the game and sports.

The Benefits:


ATHLETICS, A SPORT FOR LIFE.
LONG-TERM ATHLETE DEVELOPMENT.
Active for Life
Enter at any age
Train to Win
Males 19 +/– and Females 18 +/–
Train to Compete
Males 16-23 and Females 15-21
Train to Train
Males 12-16 and Females 11-15
Learn to Train
Males 9-12 and Females 8-11
FUNdamentals
Males 6-9 and Females 6-8
Active Start
Males and Females 0-6
athletics.ca

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BENEFITS FOR THE CHILDREN	BENEFITS FOR ADULTS TO OLDER
1. Improves attention and memory 2. Builds strong muscles and endurance 3. Develop whole body system (Mentally, Physically) 4. Develop Long Term Health	1. IMPROVES SLEEP QUALITY 2. Stress and Anxiety Management 3. Improve Emotional balance 4. Sense of do and don't do, what to do? and How to do

Benefits to the coach/Trainer

The findings of this study highlighted the importance of athletes' physical literacy in predicting coaching efficacy and learned behavior, which were the main reflective domains of the effectiveness of coaching.

Physical Literacy of only 1 event from Athletics

The Science behind a Javelin Throw

1. **Approach run**
2. **Release**

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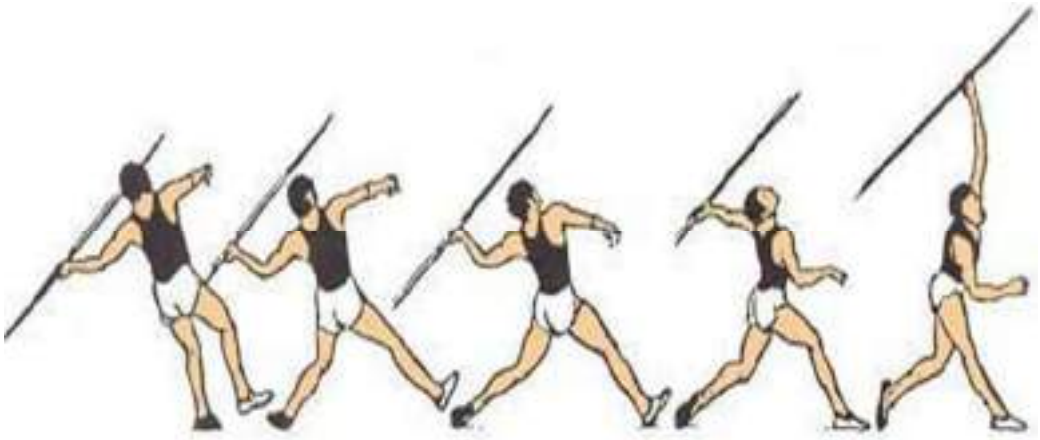
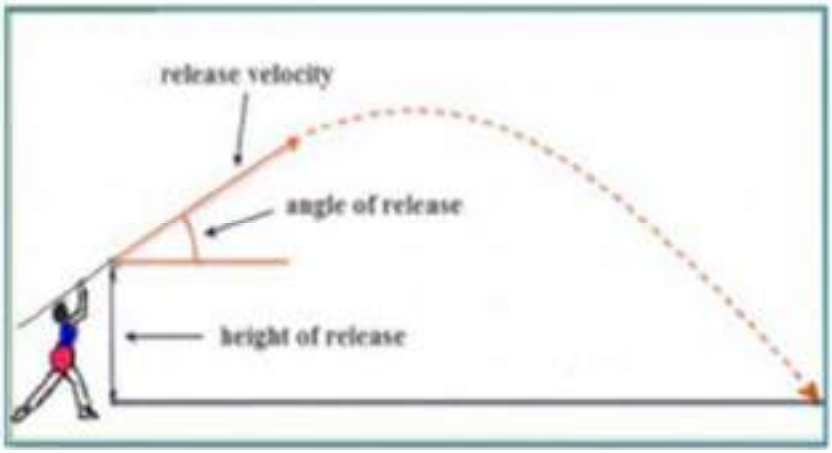
3. **Braking (final phase)**
4. **The flight of the javelin**

For the fulfilment of the objective, an optimal approach velocity and optimal position of the body segments is required at the end of the approach run. The running step consists of a run-up which is followed by the cross over steps. The initial running steps are meant for building the speed and the rhythm of the thrower. The maximum running velocity should optimally lie in the range in order to attain the maximum throwing distance. The cross over steps allows the thrower to land with their weight over the back foot and establish a good position before throwing.

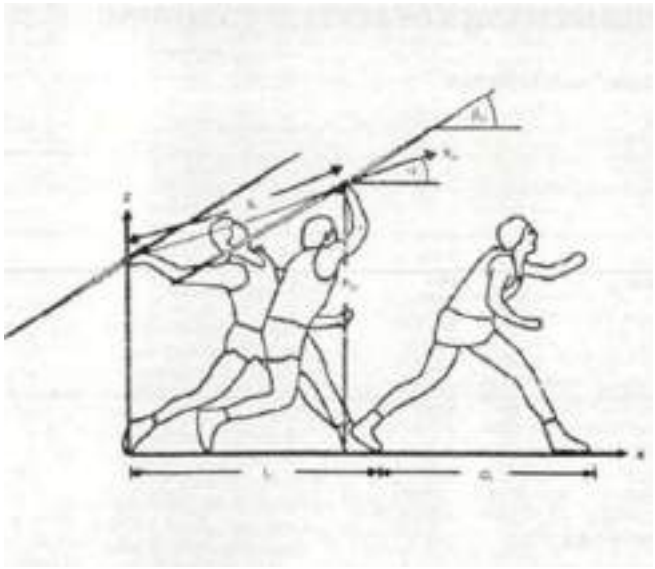


APPROACH RUN

Apart from the speed of the release, the angle and height of release are also essential in deciding the distance of the throw. The optimal angle of release and optimal angle of height constitute the release phase. The **angle of release (α)** is defined as the angle between the release velocity and the horizontal line. The **angle of attack (β)** or the angle of the height is the angle of the longitudinal axis of the javelin and the horizontal line just at the instant of release. These angles are affected by the aerodynamic conditions and further the throwing distance is also governed.



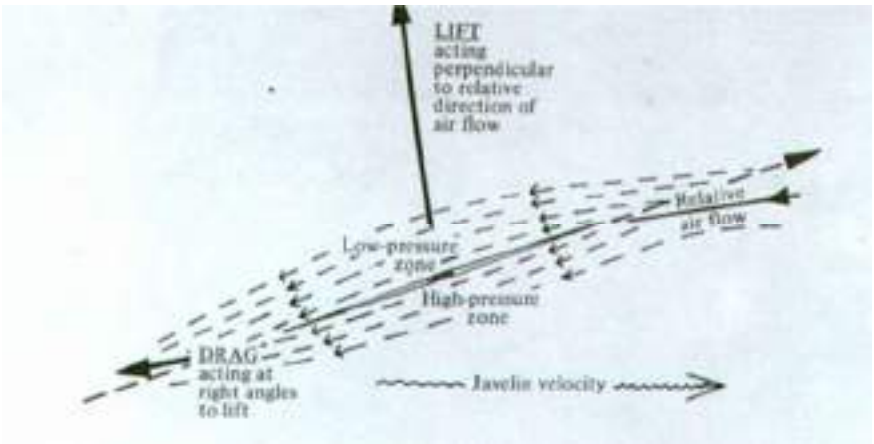
Trajectory of the javelin throw



Angles during the release phase

In the release phase, the velocity is reduced and further in the braking phase this approach velocity has to be reduced significantly and considerable deceleration should be there. The braking distance should be minimized so that complete deceleration is allowed after the release and the athlete doesn't cross the foul line.

The release velocity is governed by the fact that how well the impulse transmission takes place to the throwing arm. The momentum built up in the thrower is transferred to the javelin before its release. The phase flight of the javelin starts from the last contact of the javelin with the hand and the first contact of the javelin with the ground. As the javelin loses contact with the athlete, its flight can't be controlled by the athlete anymore and is governed by aerodynamic factors such as wind velocity. The forces acting on the javelin while the motions are the drag force and the lift force. The drag force is basically a resistive force and acts against the direction of the flight and the lift force acts vertically to the direction of the flight.



Forces on javelin during flight

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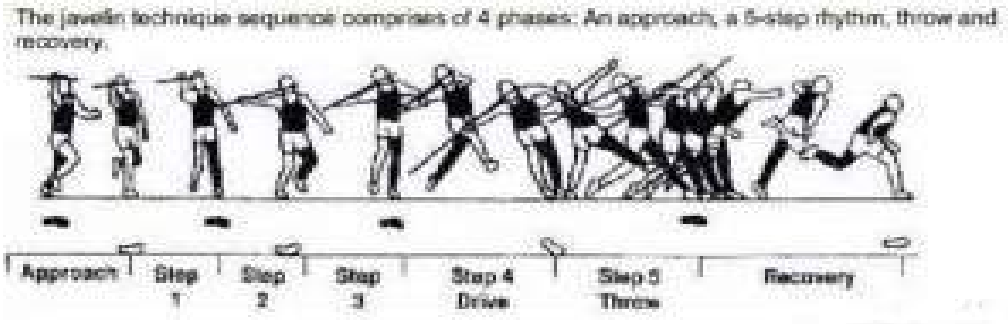
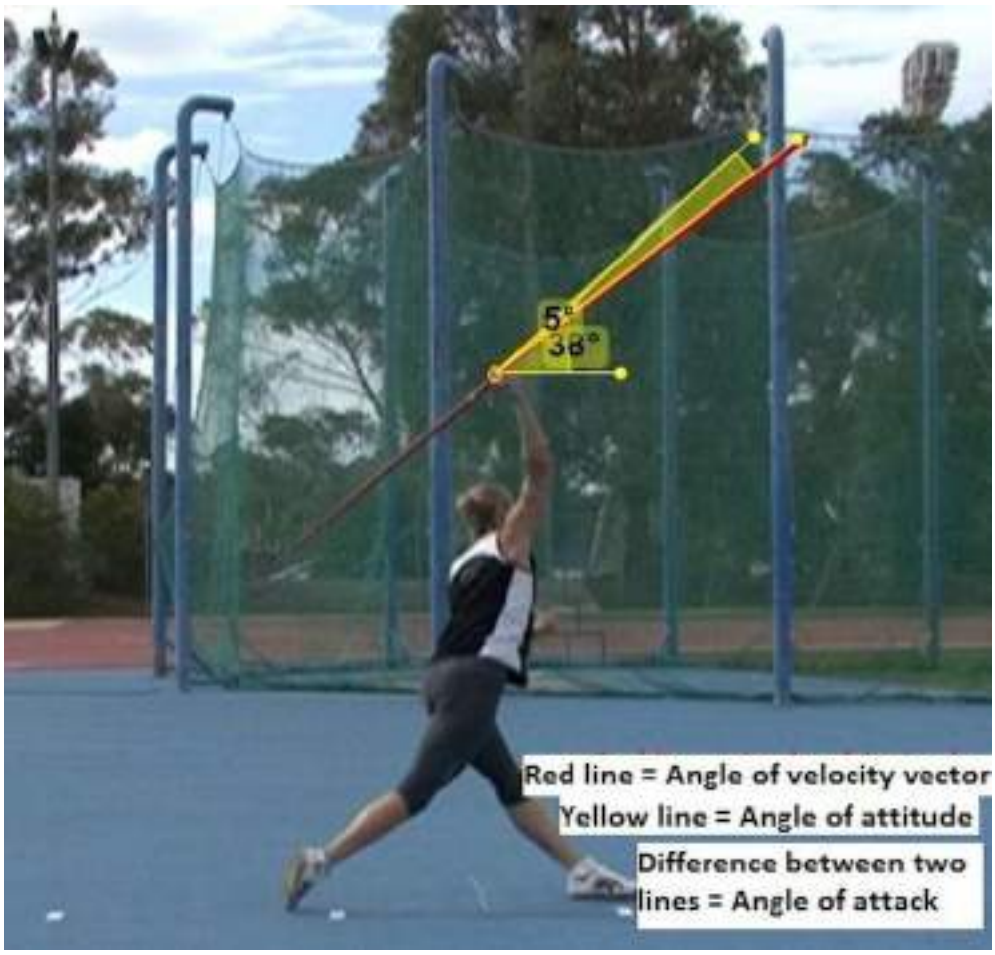
Mechanism of Javelin Throw

Phases of Javelin Throw

- **Approach Run**
- **Crossover Phase**
- **Release Phase**
- **Recovery Phase**





The above photographs shows only two path/factor of learning, performing, showing etc. Like Science of Javelin throw, Mechanism uses in Javelin throw, Calculation of throwing, art of

throwing etc. This was just one event of SPORTS WORLD, every activity includes Art, science, mechanic, physics, calculation and many more. That means no sports activity is possible without its proper knowledge.

CONCLUSION:

In today's Physical literacy is now a major factor in sports performance physical education, physical activity and sports promotion worldwide. Physical Literacy is a necessary part to convert the skills in action through techniques without getting injured. With the knowledge and uses of Physical Literacy, today the Kids, sports person are able to choose their sports and the coaches are able to train them in a particular way and the physical fitness enthusiast can choose and reject the activity as per their capacity and range.

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ROLE OF COACHES IN CONTROLLING EMOTION AND INCREASE ATHLETE'S PERFORMANCE THROUGH EMOTIONAL REGULATION

Deepak M.P,
Research scholar, Department of Physical Education and Sports sciences university of Delhi
Lalit Sharma
Professor Department of Behavioural Sciences, Indira Gandhi Institute of Physical Education and Sports Sciences, University of Delhi

e-mail: deepakdasmp@gmail.com

ABSTRACT

Emotions are an integral aspect of the performance process. Individual athletes frequently go through emotional experiences, which can have a significant impact on their performance. The coaches also have a big impact on how well players perform based on their emotions. Effective emotion regulation has impact on athletes' overall well-being as well as lets them to perform at their best, even in difficult situations. Here, we outline how coaches influence athletes' emotional states. To manage their emotions and the emotions of their players, coaches are advised to use an array of emotional management techniques. A strong grasp of emotion theory may assist coaches and players in performing at their peak, especially when it counts most. Coping mechanisms are an effective tool for helping players handle their emotional range, perform to their highest potential, and better address the emotion-performance relationship. This is especially true in youth sports. Coaches can encourage athletes to do better in the future by aiding them to acquire more accurate and positive reflected evaluations that in fact highlight the positives and convey an effective emotional message: they will ultimately succeed.

Keywords: Emotion, Emotion regulation, coach-athlete, emotion and performance.

INTRODUCTION

According to Eisenberg, Spinrad, and Smith (2004), emotion regulation is the "process of initiating, avoiding, inhibiting, maintaining, or modulating the occurrence, form, intensity, or duration of internal feeling states, emotion-related physiological processes, emotion-related goals, and the behavioural concomitants of emotion, generally in the service of one's goals." On the other side, regulating happy emotions is also referred to as emotional regulation, which encompasses both negative and positive emotions. Sports psychologists consequently consider emotion management to be a crucial psychological ability. Background and proof Emotion regulation, as defined by Gross and Thompson (2007), is the automatic or purposeful use of methods to originate, sustain, modify, or reveal emotions.

High quality coaches have identified the capacity to connect emotionally with their athletes as an essential aspect in their coaching. Good coaches may be those who can recognize, comprehend, and control their own and others' emotions. The athlete's emotional fluctuations, excitement, and anxiety should be effectively controlled by the coach by developing the

appropriate strategy and communication channels. In an encouraging, open, and cooperative environment, coaches must determine the needs of the athletes, comprehend their motivating preferences, and implement the right tactics. Coaches should demonstrate leadership behaviours that are acceptable for the process and have the proper leadership knowledge and attitude for a wide range of personal and environmental situations. It is crucial that the coaches and athletes maintain open communication channels throughout the training process which impacts the athlete's attempts to regulate their emotions.

In order to teach and put these strategies into practice in sports, coaches are essential. Effective emotion management among athletes enhances performance, teamwork, and good mental health. Coaches can encourage players to regulate their emotions effectively by using a variety of strategies and techniques. The following are some methods coaches can employ:

GOAL SETTING

Desired emotions are referred to as emotion goals (Mauss & Tamir, 2014). lower-order objectives (like thinking positively) and be served by them. Goal setting in emotion regulation refers to the activation of emotional objectives rather than higher-order or lower-order elements in the system, such as motives or tactics. Emotion regulation is defined and distinguished from other types of self-regulation by the particular activation of emotional goals (Gross, 2015). Goal-setting, goal-striving, or their interaction can have an impact on the outcomes of emotion regulation. Athletes and coaches can collaborate to develop goals for both performance and emotion. These objectives may provide athletes with a feeling of direction and purpose, which may help them maintain emotional stability.

COPING STRATEGIES

Coping refers to a series of "thoughts and actions that enable people to handle difficult situations" (Stone, Helder, & Schneider, 1988). Therefore, coping is the best effort made to manage overwhelming or stressful internal and external demands (reducing, minimizing, tolerating, or controlling). Athletes can manage their emotions by using a number of coping mechanisms that coaches present to them. Deep breathing, progressive muscular relaxation, visualization, and mindfulness practices are some of these treatments.

MINDFULNESS AND RELAXATION TECHNIQUES

Self-report, physiological, and neuroimaging techniques have all been used to examine how mindfulness meditation improves the ability to control one's emotions (Tang and Posner, 2014). According to Tang et al. (2015), mindfulness-based emotion regulation can involve implicit and explicit processes. Through improved emotional regulation, or the capacity to control our emotional state, meditation may have several positive impacts. According to studies (Kabat-Zinn, et al., 2012; Miller, J.J., et al., 1995), meditation programs can help people with anxiety-related conditions feel less nervous, panicked, and depressed for up to three years after the initial meditation intervention. Teach athletes mindfulness meditation to improve their awareness of the moment and decrease stress. Introduce relaxation methods such as guided imagining, progressive muscle relaxation, and deep breathing to help sportsmen maintain calmness under pressure.

PSYCHOLOGICAL SKILLS TRAINING

Many factors disrupt emotions, which has a disproportionately negative impact on performance. The physical stress reduces as the emotional/mental stress rises, particularly in the days leading up to competition Bompa et al., 2019; Blumenstein and Weinstein, 2010). Routine is the application of mental skills and techniques that boost an athlete's performance while blending elements of their repertory during numerous events. Routine is a strategy for controlling emotion. Training in psychological competencies is incorporated by coaches into weekly practice sessions. These sessions include sharpening focus, strengthening mental toughness and developing emotional regulation skills.

EMOTIONAL INTELLIGENCE (EI)

EI indicated significant levels of anger and confusion, whereas athletes who had high EI scores reported low levels of these emotions as well as high levels of calmness and joy (Laborde et al., 2016). In the field of research on sports psychology, EI is positively and negatively associated with athletes' pleasant emotions and performance in sports (Laborde et al., 2016). Athletes can learn about emotional intelligence from their coaches. This skill involves, being able to recognize and control one's own emotions as well as understand and empathize with those of others. As a result, the team's relationships and resolution of conflicts may improve.

SELF-AWARENESS EXERCISES

The capacity to recognize, express, understand, and process emotions is called emotional awareness (Boden and Thompson, 2015). The benefits of emotional awareness, which entails recognizing and dealing with emotions, include emotion management, good interpersonal functioning, and a decreased risk of PTSD (Poole et al., 2017). Athletes who possess the ability to control their emotions are more capable of handling stressful situations, injuries, and feelings of failure (Berking et al., 2010; Ozdemir, 2019). Encourage the players to keep an emotion diary in which they record what they are feeling prior to, during, and following practices and games which. Use video analysis to help athletes identify their emotional expressions when competing.

PRE-GAME ROUTINE

Routine is a strategy to regulate emotions that entails the use of mental strategies and tactics to enhance an athlete's performance, which incorporates components of their repertory during various events (Lidor, 2007; Jackson, 2014). Preparatory routines (PR) will help athletes focus their attention, control the way their bodies respond to stress, and execute their motor functions with minimal aware of obstruction (Jackson, 2014; Bompa et al., 2019). A pre-performance routine (PCA-R) can help athletes control their emotions, feel psychologically prepared, as well as improve their confidence. It depends on the athlete's past competitive experience, from which they select multiple pre-competition activities, behaviour's, feelings, and mental strategies related to past accomplishments. In team sports, the athlete correlates their personal routine with the schedules of the team's preparation, such as squad meetings, small-group instruction (such as defence and attack), communicating with the coach, and squad warm-up (Rupprecht et al., 2021).

VISUALIZATION AND MENTAL REHEARSAL

Athletes can get a greater awareness of how they behave emotionally and see developments or triggers by picturing particular feelings or circumstances. Through visualization, athletes can also practice various emotional reactions, enhancing their ability to control their emotions and regulate their emotions. By seeing the feelings, and incidents, and working through various scenarios to understand how to react to them, visualization may also be used to work through challenging emotions and experiences. A helpful tool that can assist athletes in improving their performance and general well-being in sports and exercise is mental rehearsal. Athletes can improve motor learning and performance, as well as motivation, focus, confidence, and emotional regulation, by mentally practising skills, methods, and outcomes. Encourage players to engage in mental rehearsals where they imagine themselves performing successfully and regulating their emotions. Help athletes create accurate mental images of themselves remaining composed in stressful times.

STRESS INOCULATION TRAINING

Donald Meichenbaum developed stress inoculation training (SIT), which is based on the concept that, if an athlete is exposed to stressful situations and learns to manage them at levels that increase incrementally, they will acquire a higher tolerance for it. It is a multifaceted approach based on coping mechanisms that encourage the development of adaptive and positive self-statements, images, and ideas in order to improve both the psychological well-being and performance of the athlete. It has been discovered to be successful in reducing anxiety and improving athletic performance. There are three stages in SIT. The conceptualization phase attempts to increase the athlete's awareness of the effects of both positive and negative self-talk and imagery. The rehearsal stage includes instructing the athlete how to employ a variety of particular coping techniques, such as arousal control, visualization, and self-talk, which develops coping resources. The actual skills will depend on the athlete's individual requirements. The athlete then practices the abilities in progressively difficult conditions during the application stage. As coping mechanisms become more sophisticated, the application starts with low-stress situations and gradually progresses to higher-stress situations. The use of imagery, role-playing, and simulation of increasing perceived stress are specific application techniques.

Coaches simulate high-pressure situations in practice sessions to help athletes practice emotional regulation under stress. This helps athletes become more resilient and composed during actual competitions. Coaches have a multifaceted role in promoting emotional regulation in sports. Cohesive and supportive team environment can reduce negative emotions like anxiety and increase positive emotions. implementing these techniques and approaches, coaches can create a supportive and emotionally intelligent environment that helps athletes regulate their emotions, perform at their best, and enjoy a more balanced athletic experience.

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ROLE AND IMPACT OF TECHNOLOGY IN THE SPORTS INDUSTRY

Chandan Kumar Roy, MPEd. Student, Central University of South Bihar, Gaya
mirnaldoaccess@gmail.com
Dr. Usha Tiwari, Associate Professor, Department of Physical Education Central University of South Bihar, Gaya
ushatiwari.@cusb.ac.in
Dr. Ashish Kumar Singh, Associate Professor, Department of Physical Education Central University of South Bihar, Gaya
ashsihsingh@cusb.ac.in

ABSTRACT

Today's world is a world of advancement, and the role of technology takes a huge place to make the sports industry faster and more accurate and helps teams and individuals to achieve optimum level of performance and gives the accurate data of an individual athlete as well as team to be analysed post games. It makes it easier to detect results minutely and in no time. Games and Sports cannot be ignored as it spreads its impact on the various aspects in the field of sports. The various technologies used in various games helps the teams and individual to perform very precisely accordingly such as Video Assistant Referee (VAR), Wagon Wheel, Hawkeye, Goal Line Technology, Connected ball technology and Motion Sensor. The purpose of this study is to understand the role and impact of technology in the sports industry in today's world. How technology evolved the sports now for upliftment of sports with various technologies and advanced technologies being used in the sports.

Keywords – Motion sensor, VAR, Goal line technology, Hawkeye, Wagon wheel, Technology.

INTRODUCTION

Technology has had a profound impact on modern sports, revolutionizing various aspects of the sporting world. Technology in sports industry has a vast role in uplifting it's standard in today's world and the advancement with the modern time also emerging with its modification in the technology as its demand is increasing. Technology has evolved and from late 90's and it took a drastic change in uplifting the sports standards through various parameters of technological device used in games. Technology has completely transformed the way athletes train and improves their performance. Technology revives the sports in a different way of manner by making it faster, accurate, and precise with the modern time. Sports communicates from a familiar field. Hence, streaming channels are fiercely competing to become main competitor. This streaming channel wants to offer viewers the most ideal experience using the latest innovation. Few innovations used to report channels for creating various images such as colour wagon wheel is the Hawkeye. At this point player can joke around and watch slow motion footage. They could then make random picks as directed by arbiter which would mean final score of the game would be unique, because of this it's a good idea to make the referee decision less accurate if the ball is

travelling faster than 40 mph. They make random picks as directed by arbiters, which would be unique.

TRANSFORMING SPORTS FOR THE DIGITAL WORLD:

The growing use of technology in sports which includes devices for uplifting the standard of sports in today's world by helping officials and reducing the level of errors to help officials in decision making. It affects the sports industry through advancements and modifications in technologies and boon in the modern era as it gives an extra edge. This technology which used in the betterment of sports and athletes' performance play vital role as they made technologies to be upgraded and updated with times.

- Technology helps to give us the precise and accurate results by time measurement accuracy and provides the detailed form of reading of data collection of pre and post games.
- Technologies reduce the man labour which is time taking task like all feeding machine in basketball and tennis which improves the quality of performance.
- Instant replay booths can be used multiple times with the help of device called hawk eye, video assistance referee (VAR), hawk eye, goal line technology.
- Technology helps to design advanced sports device according to the games which enhance the quality of decision-making during sports.
- Sports equipment which replaced by advanced gadgets vanishing spray, ball feeding machine, sensor chips, breathable, Light weight, ultra-wide band sensor and inertial measurement unit.
- Develops the infrastructure in its advanced form from early 90s in various sports football, cricket, basketball and athletics.

Experimental Section

This section describes studies related to following categories:

- Connected Ball Technology
- Video Assistant Referee
- Motion sensor
- Goal Line Technology
- Hawkeye
- Wagon Wheel

- **CONNECTED BALL TECHNOLOGY**

The iconic technology inside Qatar world cup ball enables the referee and football officials to make more precise decision. The official match ball 'Al Rihla' will have a semi-automated offside technology, an enhanced version of VAR (Video Assistance Referee) system that will enhance the already existing VAR system used in 2018 World Cup, Russia. Provides unprecedent level of data and information for referees in making more precise judgement turn enhancing match play and overall fairness. 'Al Rihla' will be the first ball to feature this innovation. Combined with player position data and by applying artificial intelligence offers VAR

instantaneous information to help optimize decision making after its reveal in March. This new technology developed in collaboration with FIFA and KINEXON, sensor network and edge computing, enables the video match officials to review the live data for the first time by automatically providing very accurate information, 500 times per seconds, on when a player has touched the ball. It will inform offside situation and assist in detecting unclear touches thereby ultimately improving the quality and speed of VAR decision-making process. Al Rihla official match ball of FIFA World Cup 2022 with its connected ball technology will be used in all of tournaments 64 matches. The raw data captured during FIFA World Cup 2022 through connected ball technology and transmitted to video match officials is fully owned and managed directly by FIFA.

Limitations of using connected ball technology is the chances of accuracy fairness in decision making for the on-field match referee official. It can be expensive, and many cases of controversies comes in limelight.

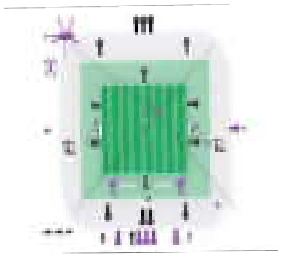

adidas reveals the first FIFA World Cup™ official match ball featuring connected ball technology [12]

- **VIDEO ASSISTANT REFEREE**

VAR system is supporting tool for official. The use of video match officials (VMOs) in football was included in 2018/19 edition of laws of the game and was successfully used at 2018 FIFA World Cup. Since then, system has been implemented in over 100 competitions worldwide. VAR team supports decision making process of the referee in 04 match changing situations:

a) Goals and offences leading up to goal
b) Penalty decisions and offences leading up to a penalty decision
c) Direct red card incidents only (not second yellow card/caution)
d) Mistaken identity (checks for clear and obvious errors)

Limitations of this VAR leads to controversies between players, coaches and fans. It can be too expensive and Slow down the game as it took much time for each review. Also, it wastes time as it calls players who are millimetres close to offsides and makes player frustrated.

var offside check qatar - Bing images [13] Video Assistant Referee (VAR) (fifa.com) [14]

- **MOTION SENSOR:**

A new adidas suspension system provides VAR team with precise ball data in real time to support fast and accurate offside calls and will allow for most time precise motion sensor to ever be used inside world cup official match ball, tracking every touch of the game at a rate of 500 times per seconds which is powered by rechargeable battery and can be charged by induction. The 500 Hz inertial measurement unit (IMU) motion sensor inside the ball enable collection of very accurate ball movement data and transmission to video match officials within seconds throughout tournaments.

Figure1. Semi–automated technology

World Cup 2022: Qatar tournament to feature semi-automated offside technology with ball sensors and cameras | Football News | Sky Sports [15]

Limitations of this motion sensor disturb the players position of contact of point of players with the ball and confuse the referee in decision making process.

- **GOAL LINE TECHNOLOGY:**

GLT determining whether the whole part of the ball has crossed the goal line. It continues to be staple in football world since it was 1st implemented in 2014. The technology provides clearly indicate whether ball has fully crossed the line. This information serves to assist referee in taking their final decision and this transmitted within 01 second which ensures immediate response from referee. Match officials receives the signals on their watches and the system uses 14 high speed cameras mounted on catwalk of stadium or under the roof. The data from cameras used to create 3D animations to visualise decision to fans on the giant screen inside stadium.

Limitation of this goal line technology reduces the area for the goalkeeper for its preparation during the gameplay.

How Does Goal Line Technology Work? (scienceabc.com) [16]

- **HAWK EYE TECHNOLOGY**

These results are used to select the filter pixels which are available for each frame and examine those pixels from different angles. Following these analytical steps, several representations of

some pixels were created, and their contribution including rendering of cricket, the boundaries of the play area and other important minor details. This figure 1 help to comprehend procedure more pricesly.

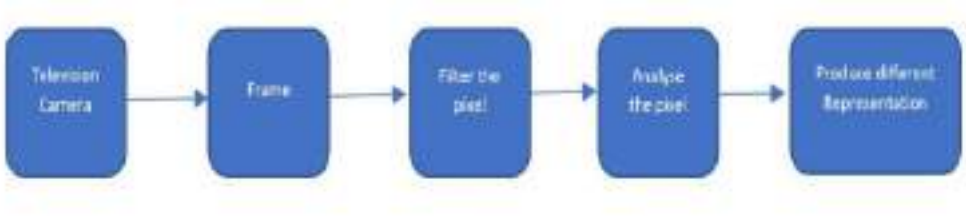


Figure 1. Rendering of playfield

Pixels coordinate numerically, including their time and home coordinates [2]. During this time, statistical formulae being employed to recreate the flights of cricket equipment's and purpose of its impact and some other relevant statistics connected to field areas. These data will be also account for the specification relating to completely different pixel present in several frames from different angles. After the execution, extra calculation mentioned above, system leaning option. The foundation of all technical system is presumption. This hawk is based on the triangulation hypothesis. In this figure 2, we will be understanding of triangulation principle, which says by using given points, angle must recognise situation that is being measured.
Limitation of this technology makes the game more critical by the match official because of the camera placed in different angles and it speaks about the different contact point.

Hawk-Eye set for UEFA debut in Europa League final - Sports247 [17]

- **WAGON WHEEL:**

These wagon wheels display various data in relation to the shots that a slugger faces which manufactured by the hawk eye technology application. To achieve this, the device points out the ball path after ball is thrown. Generally, broadcasting channels have been used these statistics to improve their viewer comprehension and clarity. The Figure 2 shows the graphical representation of how the system make the graphics by using data of 6, 4 and 1s played by the batsman. Experts utilize these images to provide their thoughts on the choice of shot. The Hawk Eye system may also be considered as a helpful tool when playing cricket because players typically use this information to analyses their weaknesses and enhance the skills.

Limitation of this technology makes the players playing style public and can read their game in no time.

Kohli's ridiculous wagon-wheel from his century today : r/Cricket (reddit.com) [18]

Figure 2. Graphical representation of 6, 4 & 1s played by the batsman

CONCLUSION:

Innovation is the lifeline of modern sports world, there is room for improvement in all spheres of life including in advancement and modernize technology. Technology cannot be used as the total replacement of human involvement. The realm of sports is not an exception, where new technologies are available to the athletes, coaches, scientist and authorities of governing body to function accurately and with the proper and systematic regulation and purpose. In officiating, it may disturb or undermine official decision and expertise, data handling and storage, can be issue as real danger hacking with technology. It's impossible to imagine modern sports and exercise science without technology in this era. It is omnipresent in every field and contribute to the development in the field of sports. Technology has changed many ways what we think of as the athletic body and its relevance with the sports performance. The technology offers players level of training that is not possible in the field. The player supplied with 08 balls and in quick succession and there are required to respond quickly so that they can increase pace and accuracy accordingly. Technology fastens the accuracy of decision-making process, precisely collect data in fraction of millisecond and monitor the game situation and helps in post analyzation.

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HOW TECHNOLOGY ENHANCE THE PHYSICAL EDUCATION CURRICULUM CHANGING THE NATIONAL CURRICULUM FOR PHYSICAL EDUCATION

PRANVIR PRATAP SINGH

DR. URVESH SHARMA

JAKIA ALI

ABSTRACT

This study explores the potential of technology to enhance the national curriculum for physical education. As technology continues to shape the educational landscape, it is imperative to investigate how it can be effectively integrated into physical education to optimize teaching and learning. Using a mixed-methods approach, including surveys, interviews, document analysis, and classroom observations, this research examines the current state of technology usage in physical education, identifies its benefits and challenges, and proposes strategies for curriculum enhancement. Anticipated outcomes include practical recommendations for curriculum integration, improved student engagement and learning outcomes, and a better understanding of key obstacles to technology adoption in this context. This study seeks to contribute valuable insights to educators and policymakers, facilitating the development of a modern and engaging physical education curriculum that prepares students for the technological demands of the 21st century.

Keywords: physical education, national curriculum, technology enhance, educational landscape.

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SPORT MARKETING AND ITS FUNDAMENTALS

DR. NITIN GANGURDE,
DIRECTOR PHYSICAL EDUCATION & SPORTS,
SIR DR. M. S. GOSAVI COLLEGE OF COMMERCE,
KRISHINAGAR, NASHIK-5 (MAHARASHTRA).
EMAIL: DR.NITINGANGURDE@GMAIL.COM
CELL: +91 93710 51144

ABSTRACT

Sport marketing is a process and this process is a continuous cycle, which never ends. Sport marketing is one of the most important functions of a business in sport, because marketing of sport activities will define business. Sport marketing involves marketing fundamentals which are applied in industry. Growth of sport marketing principals is based on basic marketing principals. Mode and exercise of sports marketing activities are modified and adapted according to the business of sport industry and therefore, sport marketing is based on its primary marketing methods.

This paper is presented for the Forth International Conference on Physical Education and Sports Science as an overview model of sport marketing management, its element and the process.

Keywords:
Sport marketing, Marketing management, Sport industry, Marketing fundamentals, sport trade.

INTRODUCTION

The sport marketing uses sports in any form to assist in selling goods and services and this type of marketing relies less on a single plan and more on utilizing sports content to aid marketing efforts. Sport marketing appear to be similar to general marketing, but sportmarketing does have differences to other forms of marketing. It is the method of connecting likely with customers through a common interest in sports. This businesses may reach out to consumers who are not otherwise exposed to their brand by utilizing sports as a platform. It is very much necessary to understand general marketing as well as the unique circumstances of sport for getting success in sport marketing. Each and every business has a purpose and every industry or business strives to stay steady with its purpose to enhance its chances for success.

Sports marketing is a subdivision of marketing, sport marketing strategy which is used to promote sports events, products, pieces of equipment, services, or teams via sporting events, athletes, and sports teams. Sports marketing's goal is to promote the product or a brand or even a brand name, in this service with which trader have strategies to advertise sports or advertise some other product, service, companies, and more through sports event. To achieve the goal of promoting, the sport trader can take advantage of any channels along with some of them may include sponsorships for teams or individual sportsman, television or radio advertisements during the different broadcast sports events and celebrations, advertisements on sports sites, etc. Sports

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marketing is also one part of sports promotion, which is related to multiple types of the sports industry, which may consist of social media, advertising, broadcasting, ticker selling, digital platforms. The strategies of marketing is based on the traditional four "P", which includes Product, Price, Promotion, and Place. Which can be changed into an additional one when it comes to sports marketing, including Planning, Packaging, Positioning, and Perception, this is the reason why another four "P" was created for just sports marketing is that sports are considered to be a service.

Sports Marketing types:

As there are multiple ways of marketing, but when it comes to sport marketing, one has to think what exactly you are going to advertise. Therefore some of the types of sports marketing are as follows.

Sport Marketing | Marketing through Sport | Grassroots Sport Marketing

Sport Marketing

Sport Marketing is the promotion of sports, sporting events, associations, and teams, in which marketing has a direct connection with sports. It is stated as creating a "live" activity centered on a specific subject for the purpose is to promote the events, association or teams.

Marketing through Sports

As the marketing of sport is the promotion of various services, materials, or causes by leveraging the popularity of sports. In this business sports personal and teams promote multiple firms and sponsors who use sporting events to sell their products to the viewers.

Grassroots Sport Marketing

Sports marketing is all about promoting sports to the general people at grassroots level. The idea of this is to encourage people to participate in sports and to make a sport more appealing as fitness rather than entertainment.

Sport Marketing Factors

The factors which have direct and indirect influence on the trade that must be referred to when making decisions and developing strategies to develop the sport trade one has to study the following four categories:

Company dealing with sport commodities should know the Strengths, Weaknesses, Opportunities, and Threats of the sport product along with the objectives, financial strength, production, product management, pricing objectives and strategies, distribution strategies, and promotion strategies. Further, all of these factors can be compared to competitors.
Climate is the important factor to be consider by the company management i.e., environment or atmosphere, current situational factors in a society that can affect the trade in sport. The legal aspects of the public should be consider such as, social andcultural, Geo-political, ethical, trends, technological progress, community, education, corporate, and economy to analysis which is going to have effects on the trade in sport.
Consumers and the potential need to be consider for the existing as well as for the new customers so that sport trader will be able to develop new sport products or change the existing products, set new goals, and make other strategic decisions for the development of sport trade.
Competitor sport trader must constantly analyze the competition to gain an understanding of what competitors are doing, what they are capable of doing, and how these activities might impact upon your sport trade, which will help the sport trader to from new strategies or to change existing strategies.

The fundamentals of sports marketing

Sports marketing is getting so developed that we don't need to discuss its importance in 2023 anymore. The forms of sports marketing range from the different types of sports events. The teams creating campaigns for themselves to businesses or companies capitalizing on sports' popularity to promote their products. Therefore the three fundamental elements of the field as a whole are as follows.

Team Marketing

Sport marketing's first fundamental is advertising the sport event, organizations, and sporting teams who are directly related to the sports trade. When it comes to sports marketing, corporations like teams it is difficult to have many spectators viewing them operate on a daily basis. In major sporting events which are followed by billions of people, teams marketing is still included, because those events are usually supported by sponsors, which means it is an ideal chance to showcase different teams, individual players, and raise the stakes of the game to draw the attention of more viewers. When the sporting team are able to advertise themselves via media coverages, events, or the following of fans, they will have a chance to gain revenue. This massive financial opportunity comes from television deals.

Product Marketing

Sport brands spends marketing money on having their advertisements displayed on those sporting events or making sports-related campaigns. The sporting event watching on television or listening to them on a radio channel, it is easy to catch many advertisements during commercial breaks or even in the broadcast itself, which is a great opportunity for brands to advertise their products. The budget of marketing is spent on product advertising through sports is more than expected. The most common type of product marketing through sports is sponsoring sporting events, teams,

or sportsman. When a sportsman uses particular products while appearing in front of fans. This is the type of publicity, which results in an enormous price tag.

Promotion of the sport itself

Sports marketing is by increasing the popularity of the sports itself. This is the area which has been focused on because its goal is what all parties are interested in. Nowadays, sports remain as essential parts of daily life. The professional teams often wish to keep the sport popular worldwide, across all ages, gender, and socioeconomic status and therefore, they spend time and money on the sport's future by supporting Youth sports leagues and charity initiatives.

CONCLUSIONS

Sport marketing activities are developed with specific and strategic decisions based on research and information. These activities are typically based on a strategic process, or model. Sport traders must study what the need of the costumers and they should provide it. The task of trader is what the consumer wants and is the company's capacity to manufacture it, distribute it to the customers.

The concept of competition in business is theidea that a sport business is competing against another business to win the customer's. Staying in business at a successful level is known as winning the business. Sport trade success is usually measured by achieving the sport company's objectives of achieving more costumers and gaining more profit.

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"AN ASSESSMENT OF GOOD GOVERNANCE IN THE ALL INDIA FOOTBALL FEDERATION (AIFF)"

[1]Deiphibari Lyngdoh, Ph.D. Research Scholar
[2]Dr. V Ramesh Kumar, Assistant Professor & [3]Dr. S Prem Kumar, Professor
Department of Sports Management,
Tamil Nadu Physical Education and Sports University
Chennai, India 600127

ABSTRACT

The aim of this research is to conduct a comprehensive evaluation on the level of Good Governance within the All India Football Federation (AIFF). Utilizing the National Sports Governance Observer (NSGO) tool, the study meticulously assesses AIFF's governance practices while identifying areas of strength and weaknesses. Notably, the dimensions of Transparency and Democracy emerge as a commendable aspect by receiving a positive score of 73% and 61% on the AIFF's governance framework; however, Internal Accountability and Societal Responsibility reveal room for Improvement. The study's recommendations form a foundational roadmap to enhance AIFF's governance. By shedding light on AIFF's governance landscape and offering a strategic pathway for enhancement, this research underscore the vital significance of effective governance in sports organisation, contributing to the broader discourse on elevating governance standards within the domain of Football administration.

Keywords: Sports, Good Governance, Football, Sports Governance, Transparency, Democracy

INTRODUCTION

Football in India has a rich history and is deeply ingrained in the country's sporting culture. Introduced during British colonial rule in the 19th century, the sport quickly gained popularity and evolved into a passion shared by millions of Indians. Despite cricket's dominance, football maintains a dedicated following and continues to thrive at the grassroots level. The All India Football Federation (AIFF) governs the sport in the country, and has made notable strides in recent years, with a growing focus on youth development and international competitions, signalling a promising future for Indian football.

Indian football boasts a rich and enduring heritage as a widely celebrated spectator sport. It once held a prominent position in Asian football and made notable strides on the international stage. However, since the 1970s, the sport in India has encountered a complex array of challenges. In a determined effort to reinvigorate the game, the All India Football Federation announced its long-awaited "Vision 2047" during a press conference in New Delhi. This strategic roadmap, spanning 25 years, aspires to shape India into a footballing powerhouse by the nation's centenary year of independence. Developed in collaboration with various stakeholders within Indian football and incorporating insights from the Asian Football Confederation (AFC) and FIFA, the plan envisions India among the top four footballing nations in Asia, hosting premier leagues within the continent, and fostering a thriving football ecosystem. The unveiling of "Vision 2047" reflects a profound commitment to reviving the glory of Indian football and charting a dynamic

course for its future. The objective lies in governing football with the utmost integrity and inclusivity, fostering teamwork and collaboration, and setting a paradigm for Good Governance. The All India Football Federation (AIFF) recognizes the imperative for effective governance, believing that it holds the key to elevating Indian Football to greater heights in the future.

Good governance, in this context, transcends choice and stands as a compelling necessity to attain excellence. Distinguished sporting organizations embrace a robust regulatory framework that safeguards the interests of stakeholders, ensures the integrity of sporting events, champions social and environmental responsibility, and enforces stringent controls over the allocation and utilization of development funds. This approach not only adds value to the sport itself but also extends its positive impact to the broader community. The significance of adhering to principles of good governance in sports organizations is underscored by several compelling factors. The evolving landscape of sports, characterized by increasing commercialization, professionalization, and globalization, has amplified public and media scrutiny. Consequently, the need to address these issues and uphold good governance principles has become paramount in the world of sports.

KEY ELEMENTS OF AIFF'S GOVERNANCE INCLUDE:

1. **Executive Committee:** The AIFF is governed by an Executive Committee, which consists of elected members responsible for making key decisions regarding football in India. This committee includes the President, Vice Presidents, and members representing various state associations and stakeholders in Indian football.
2. **General Body:** The General Body of the AIFF comprises representatives from state associations, football clubs, and other relevant bodies. It plays a crucial role in shaping the policies and direction of Indian football.
3. **Transparency:** Transparency is a fundamental principle of good governance within AIFF. The organization is expected to provide clear and open information about its activities, financial matters, and decision-making processes.
4. **Accountability:** AIFF is accountable for its actions and decisions. It is responsible for ensuring that funds allocated for football development are used appropriately and that the interests of stakeholders are protected.
5. **Stakeholder Engagement:** The AIFF engages with various stakeholders in Indian football, including players, coaches, referees, clubs, and fans, to gather input and involve them in decision-making processes.
6. **Compliance:** AIFF is expected to comply with its own statutes, rules, and regulations, as well as those of international football governing bodies like FIFA and the Asian Football Confederation (AFC).
7. **Development Programs:** AIFF is responsible for implementing and managing development programs that promote the growth of football in India, including youth development, grassroots initiatives, and infrastructure development.
8. **Ethics and Fair Play:** Ensuring ethical conduct and fair play in Indian football is an integral part of AIFF's governance responsibilities. This includes addressing issues related to match-fixing, doping, and discrimination.

9. **Financial Oversight:** AIFF must manage its finances transparently and efficiently, ensuring that funds allocated for football development are utilized effectively and for their intended purposes.
10. **International Relations:** As the governing body for football in India, AIFF maintains relationships and collaborations with international football organizations like FIFA and AFC.

Effective governance is crucial for the continued growth and success of football in India. It helps maintain the integrity of the sport, ensures that resources are used effectively, and fosters a positive environment for players, fans, and all stakeholders involved in Indian football. AIFF's commitment to good governance principles is essential in achieving these goals and promoting the sport's development and excellence in the country.

REVIEW OF LITERATURE

Sports as an activity are attracting the interest of millions of people worldwide. It is indeed, considered a universal activity that permeates every society at every corner of the world (Oketch, 2005). Governments worldwide have recognized the importance of the sector and have as such committed themselves to supporting the independence of these sports associations (Rogge, 2004). This support however is with the assumption that the sports associations observe proper governance principals. Sports federations must recognize that they influence to oversee their sport as trustees and the authority to oversee is essentially conferred in their associates and implemented by them unswervingly and indirectly over an organization of depiction (Kings Report, 2004). In order to regulate the governance of sports, the formulation and enforcement of national policies on sports administration is mandatory (Oketch, 2005). Despite there being structures for the governance of sports federations in India, there are numerous challenges being faced in the operative and well-organized delivery of sports amenities in the country. Many of the employees working in the various federations as managers are not adequately trained in the various areas of sports governance and as such the federations suffer from inadequate management which ultimately leads to poor performance of the federations.

Good governance has generally meant that organization's policies and procedure are put in place to ensure that organization achieve their goals. According to Andanje et al. (2014), good governance is not all about rules and regulations but also an attitude in mind as well as the ethical culture of the organization and the behaviors of the people on the governing body. An organization is said to have good governance if they demonstrate transparency, accountability, participation and responsibility with all the involved stakeholders. Mardiasmo (2012) stated that when an organization is seen to be governed to a high standard, it promotes confidence amongst its stakeholders, leading to better and more ethical decision making and help in to meets their legislative responsibilities.

METHODOLOGY

This study takes a comprehensive approach by employing the National Sports Governance Observer (NSGO) tool as a fundamental benchmarking instrument to evaluate the governance quality within the All-India Football Federation (AIFF). The NSGO tool is specifically designed

to assess and score the performance of individual sports organizations, covering a total of 46 unique principles related to good governance. These principles are spread across four distinct dimensions: Transparency (7 Principles), Democracy (13 Principles), Internal Accountability and control (14 Principles), and Societal Responsibility (12 Principles). In order to meticulously scrutinize the governance practices, the researcher adopted a document analysis methodology, characterized by an in-depth examination of pertinent materials. The data collection process primarily consisted of desktop research, encompassing a thorough analysis of the AIFF's official websites, governing statutes, internal regulations, and any other pertinent documents that were readily available for analysis. It is essential to highlight that the scoring procedure relied exclusively on publicly accessible data, ensuring a rigorous and objective assessment. Therefore, the researcher leveraged the pre-existing National Sport Governance Observer survey tool developed by Play the Game as the foundational framework for evaluating governance practices within the AIFF. This choice was predicated on its applicability and suitability within the Indian sports context, given the AIFF's organizational structure and statutes, which align closely with the parameters of the assessment tool.

Furthermore, the selection of the NSGO tool was driven by the pragmatic consideration that it aligns harmoniously with the inherent structures and regulatory frameworks present within the Indian sports ecosystem. Consequently, this assessment tool emerged as a judicious choice for gauging and comprehending the governance landscape within the AIFF, ensuring the research's relevance and reliability in the context of the Indian sports milieu.

To quantify the results for each indicator, the survey employs the following scoring scales:

Not relevant	Not fulfilled	Weak	Moderate	Good	Very good
	0-19 %	20-39 %	40-59 %	60-79 %	80-100 %

RESULTS AND DISCUSSION

Table 1: NSGO Index Score

Dimension	Score	Label
Transparency	73%	Good
Democracy	61%	Good
Internal Accountability and control	49%	Moderate
Societal responsibility	46%	Moderate
NSGO index total	57%	Moderate

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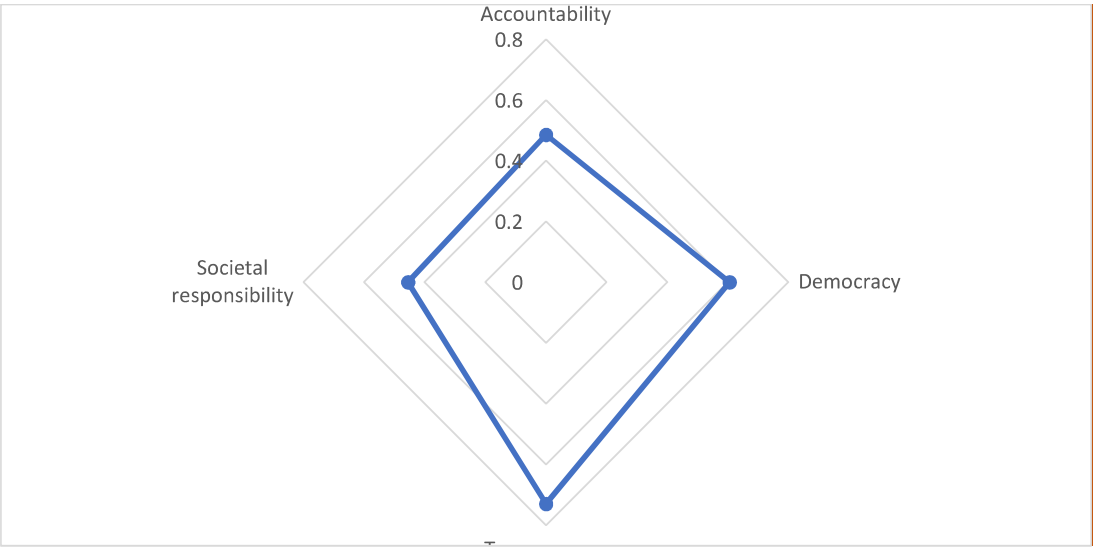
Figure 1



The results presented in the table and figure above shed light on the overall performance of good governance in the All India Football Federation (AIFF). As assessed by the National Sports Governance Observer (NSGO) tools, the AIFF attains an average NSGO index score of 57%, positioning it within the 'moderate' range of governance performance.

Delving deeper into the specific dimensions of governance, we observe a noteworthy pattern. The AIFF demonstrates a commendable level of governance in the areas of Transparency and Democracy, achieving a classification of 'Good' in these dimensions. Transparency, in particular, stands out as the strongest suit, boasting the highest score of 73%. This signifies that the AIFF excels in being open, clear, and accountable in its operations, a crucial aspect of good governance. Additionally, the Democracy dimension, with a score of 61%, reflects the extent to which the AIFF involves stakeholders and ensures a democratic decision-making process within its structure.

However, it is important to note that the AIFF's governance performance dips into the 'moderate' territory when we consider the Internal Accountability and Control as well as Societal Responsibility dimensions. In Internal Accountability and Control, the AIFF garners a score of 49%, indicating room for improvement in ensuring that it adheres to its internal rules and regulations effectively. Similarly, the Societal Responsibility dimension attains a score of 57%, suggesting that while the AIFF is making contributions to society, there is potential for enhancing its societal impact further.

In summary, these results provide valuable insights into the AIFF's governance landscape. While the organization exhibits strengths in transparency and democratic processes, there are areas within internal accountability and societal responsibility where efforts for improvement could lead to an even more robust governance framework. These findings offer a foundation for further exploration and refinement of governance practices within the AIFF to enhance its overall performance and impact on the Indian football landscape.

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RECOMMENDATION

1. **Enhance Internal Accountability:** The AIFF should focus on strengthening its internal accountability mechanisms to ensure strict adherence to its governing statutes and regulations. Regular audits and oversight can facilitate this process.
2. **Promote Ethical Conduct:** Foster a culture of ethics and integrity within the organization to prevent any potential misconduct or unethical behaviour. This includes establishing a code of conduct and ethics training for staff and officials.
3. **Increase Stakeholder Engagement:** Continue to involve a wide range of stakeholders, including players, coaches, fans, and local communities, in decision-making processes to ensure a more democratic and inclusive approach to governance.
4. **Transparency in Decision-Making:** Maintain and improve the high level of transparency achieved in the Transparency dimension. Make sure that all decisions and financial information are easily accessible to the public.
5. **Societal Impact Initiatives:** Increase efforts in the Societal Responsibility dimension to enhance the AIFF's social impact. This could include more community outreach programs and partnerships with organizations dedicated to social causes.
6. **Professionalize Governance:** Invest in professional governance structures and practices, including employing qualified and experienced individuals in key administrative roles within the organization.
7. **Strategic Planning:** Develop a comprehensive strategic plan that outlines clear objectives, timelines, and performance indicators for the AIFF. Regularly review and adjust this plan to ensure it remains relevant and effective.
8. **Training and Development:** Invest in the training and development of AIFF personnel, including administrators, coaches, and referees, to ensure they are well-equipped to perform their roles effectively.
9. **Financial Transparency:** Maintain a high level of financial transparency, including detailed reporting of income and expenses. Regular financial audits by independent bodies can further enhance credibility.
10. **Benchmarking and Continuous Assessment:** Continue to use tools like SGO and NSGO to benchmark the AIFF's governance against international standards. Regularly assess and reassess governance practices to identify areas for improvement and track progress over time.

These recommendations aim to guide the AIFF toward further improvements in governance, transparency, and accountability, ultimately contributing to the development and success of football in India.

CONCLUSION

The evaluation of All India Football Federation (AIFF) governance through the National Sports Governance Observer (NSGO) index highlights a governance landscape marked by commendable transparency and democratic engagement, positioning the AIFF favorably in these critical dimensions. However, there is a clear need for bolstering internal accountability and societal responsibility. By heeding the recommendations for governance enhancement, the AIFF can embark on a path toward more robust and inclusive governance, reinforcing its pivotal role

in fostering the development and success of football in India, benefiting both the sport and its diverse stakeholders.

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EFFECT OF PLYOMETRIC TRAINING, COMPOUND TRAINING AND COMBINATION OF PLYOMETRIC AND COMPOUND TRAINING ON SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLES AMONG COLLEGE FEMALE VOLLEYBALL PLAYERS.

Mrs. RADHIKA. A. H

PhD, Research Scholar,Department of Physical Education, Avinashilingam Institute for Home Science and Higher Education for Women , Coimbatore, Tamil Nadu, India /Director of Physical Education, Nilgiri College of Arts and Science,Thaloor,The Nilgiris.

ABSTRACT:

This Study Was Designed To Investigate The Effect of Plyometric Training, Compound Training And Combination of Plyometric And Compound Training on Selected Physical And Physiological Variables Among College Volleyball Players.Plyometric -ploys for short - is a type of exercise that trains muscles to produce power (strength +speed).**Compound** exercises are exercises that work multiple muscle groups at the same time. To achieve the purpose of the study 40 inter-collegiate female Volleyball players were selected from affiliated colleges of Bharathiar University, Coimbatore. The subjects was randomly assigned to four equal groups (n=10). Group I underwent plyometric training (PTG) ,Group - II was acted as compound training group (CTG) ,Group III combination of plyometric training (PTG) and compound training group (CTG) and group IV control group(CG). A pilot study was conducted to assess the initial capacity of the subjects in order to fix the load. The physical parameters of speed (50 mts dash), leg explosive power (vertical jump) and physiological parameters (Breath Holding Time, Resting Heart Rate) before and after training period. The data collected from the subjects was statistically analysed with'F' test to find out significant improvement if any at 0.05 level of confidence. The result of the speed, leg explosive power and Breath Holding Time, Resting Heart Rate speculated significant improvement due to influence of plyometric training with the limitations of (diet, climate, life style) status and previous training. The result of the present study coincide findings of the investigation done by different experts in the field of sports sciences. Plyometric training group significantly improved speed, leg explosive power and Breath Holding Time, Resting Heart Rate in college female Volleyball players.

Keywords: plyometric training, compound training, speed, leg explosive power, breath holding time, resting heart rate.

SUPERVISOR AND GUIDE

Dr. T. SHANMUGAVALLI

(Associated Professor)

Department of Physical Education
(AvinashilingamInstitute for Home Science and Higher Education for Women ,Coimbatore).

INTRODUCTION:

PLYOMETRIC TRAINING:

Plyometric (also known as "ploys") is a type of exercise training designed to produce fast, powerful movements, and improve the functions of the nervous system, generally for the purpose of improving performance in sports. Plyometric movements, in which a muscle is loaded and then contracted in rapid sequence, use the strength, elasticity and innervations of muscle and surrounding tissues to 23 jump higher, run faster, throw further, or hit harder, depending on the desired training goal. Plyometric is used to increase the speed or force of muscular contractions, providing explosiveness for a variety of sport-specific activities. Plyometric has been shown across the literature to be beneficial to a variety of athletes. Benefits range from injury prevention, power development and sprint performance amongst others. Plyometric can improve strength in both your upper and lower body. Examples of lower body plyometric are tuck jumps, squat jumps, box jumps and depth jumps. The goal of these jumps is to get higher, utilizing players/athletes leg strength to improve the height of players/athletes jump. Upper body plyometric include clapping push ups, medicine ball chest press throw and overhead throws. These help improve strength in your upper body. Plyometric exercises require a lot of energy, because they are highly intense.

COMPOUND TRAINING:

Compound exercises are exercises that work multiple muscle groups at the same time. For example, a squat is a compound exercise that works the quadriceps, glutes, and calves. There are two main classifications of exercises: compound exercises and isolation exercises. In this post, we will cover exactly what a compound exercise is compound exercise is one that uses multiple muscle groups at the same time to perform a movement. A good example of a compound exercise is the squat; it uses many muscles in the legs and lower body, such as the quadriceps, hamstrings, calves, glutes as well as engaging the core and lower back. Isolation movements, on the other hand, tend to focus on a single muscle or muscle group. A bicep preacher curl, for example, would focus almost entirely on the bicep, and in just one plane of movement.

VOLLEYBALL:

Volleyball is a dynamic, fast-paced game. The purpose of strength training for volleyball is not to build big muscles, but to develop the physical attributes necessary to improve a player's performance. So strength training is very important to volleyball and should not be developed independently of other abilities such as agility, quickness and endurance. When watching a

great volleyball player, the one word that comes to the mind is "quick". Everything the player does is short and quick. There are no long drawn out motions like sprinting in other sports. There is simply a succession of explosive bursts that keep the ball in play and control the flow of the game. A volleyball match can be played for five sets which means a match can last about 90 minutes, during which a player can perform 250 -300 actions dominated by the explosive type of strength of the leg muscles. The total number of actions as jumps takes up around 50-60% high speed movements and change of direction in space about 30% and as falls about 15%. The spike and block actions are dominated by the corresponding explosive type of strength which is referred to as a player's vertical jump which is usually the key to winning point.

METHODS:

Experimental Approach to the Problem In order to address the hypothesis presented herein, we selected 40 inter-collegiate female volleyball players from affiliated colleges of Bharathiar University, Coimbatore. The subjects were randomly assigned in to four equal groups namely, Plyometric training group (PTG) (n=10), compound training group (CTG) (n=10), combination of plyometric training (PTG) and compound training group (CTG) (n=10) and Control group (CG) (n=10). A pilot study was conducted to assess the initial capacity of the subjects in order to fix the load. The respective training was given to the experimental group the 3 days per weeks (alternate days) for the training period of twelve weeks. The control group was not given any sort of training except their routine.

SELECTION OF VARIABLES:

Physical variable:

1. Speed
2. Explosive power

Physiological variable

1. Resting heart rate
2. Breath Holding Time

Table I

TESTS SELECTION:

S.NO.	CRITERION VARIABLE	NAME OF THE TEST
1	Speed	50 mts dash
2	Explosive power	Vertical jump
3	Resting heart rate	Radial pulse method
4	Breath Holding	Time Manual nostril clip method

Table II

Intra Class Co – efficient of Correlation selected Dependent Variable:

Variables	F – Ratio	Df1	Df2	Sig.
Speed	0.79	2	33	0.46
Explosive power	0.06	2	33	0.94
Resting heart rate	2.98	2	33	0.06
Breath Holding Time	2.79	2	33	0.08

(The table value required for 0.05 level of significant with df 2& 33 is 3.28).

The test of significance of the regression of post-test (dependent variable) on pre-test (covariate) were analysed and presented in table IV.

Table IV

Testing the Significance of the Regression of Post-test on Per-test of selected variables

Variable	source of variation	SS	df	MS	f
Speed	Due to regression	146790.4	1	146790.4	14.87*
	residual	335640.16	34	9871.77	
Explosive power	Due to regression	28.47	1	28.47	5.95*
	residual	162.75	34	4.76	
Resting pulse rate	Due to regression	46.27	1	46.27	11.8.*
	residual	133.37	34	3.92	
Breath Holding Time	Due to regression	283.81	1	283.81	13.27*
	residual	727.41	34	21.39	

*significant at .05 level of confidence

(The table value required for 0.05level of significances with df 1&34 is 4.13).

From the table it was observed that regression based method (ANCOVA) predicts the post test scores significantly well from the pre-test scores on all the dependent variables. It shows that the pre and post test score of selected dependent variables were significantly associated. As in regression, it is important that the association between the outcome and the covariate is linear. After determining the assumptions for computing ANCOVA have been met with the pre data analysis, the univariate ANOCOVA statistical out but were examined. Then providing the ANCOVA result was statistically significant, the univariate result were examined for each dependent variable. For the significant univariate result, the post hoc comparisons were performed to identify where the difference resided. The pairwise comparisons statistic was used for the post hoc result. The result of the descriptive analysis, dependent‘t’ test, univariate tests.

RESULTS AND CONCLUSIONS:

The experimental design used in this study was pre and post-test random group design involving 40 subjects who were divided at random into four group of ten each. The data

collected from the four group before and after the experimental period were statistically examined for significant improvement by dependent's' test. No attempt was made to equate the group in any manner. Hence, to make adjustment for difference in the initial means and to test the adjusted post means for significant difference among the group, the analysis of covariance (ANCOVA) was used. Whenever the 'F' ratio for adjusted post-test means was food to be significant, the Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. In all the cases 0.05 level was fixed significant level to test the hypothesis.

1. Plyometric training group significantly improved the selected physical and physiological variable such as Speed, Explosive power, Resting heart rate and Breath Holding Time.
2. Compound training group significantly improved the selected physical and physiological variable such as Speed, Explosive power, Resting heart rate and Breath Holding Time.
3. Combination of Plyometric and compound training group significantly improved the selected physical and physiological variable such asSpeed, Explosive power,Resting heart rate and Breath Holding Time.
4. Control group did not improve all the dependent variable such asSpeed, Explosive power,Resting heart rate and Breath Holding Time.
5. Plyometric training group was found to be better in improving Speed, Explosive power, Resting heart rate and Breath Holding Time.
6. There was no significant difference among the plyometric and compound training groups in improving the resting heart rate.

RECOMMENDATIONS:

1. 1 It is recommended that the coaches, physical educationists and sportspersons may include plyometric and compound exercises in their training schedule to improve the fitness and physiological preparations for better performance.

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SPORT-SPECIFIC RELATED CONSITERATIONS FOR ASSESSING BODY BALANCE IN ATHLETES

Erika Zemková
Department of Biological and Medical Sciences, Faculty of Physical Education and Sport, Comenius University in Bratislava, Slovakia

ABSTRACT
This paper presents an overview of our findings related to the assessment of athlete's balance under sport-specific conditions using static balance tests, dynamic balance tests, perturbation-based balance tests and task-oriented balance tests. This approach includes assessment of balance a) in sport-specific positions, b) after sport-specific exercises, c) after exercises simulating the demands of the given sport, and d) after sport-specific training programs.

Keywords: athletic performance, exercise, postural stability, training

Body balance is one of the limiting factors of athlete's performance in many sports (Zemková, 2014b). Its impairment can not only affect the outcome, but may also increase the risk of injuries. Therefore, rapid readjustment of balance after sport-specific exercise to baseline is considered an important ability. Postural sway response to exercise depends on its type, intensity, and duration, as well as intensity of proprioceptive stimulation (Zemková and Hamar, 2014). Differences in postural sway may also be observed after exercises with different forms of muscle contraction and those with different activation of muscle fibres. In general, fatigue is associated with post-exercise balance impairment (Zemková and Hamar, 2014). Such an effect is usually a consequence of prolonged exercise. However, our findings proved that after short-term intensive exercises rather than fatigue, a hyperventilation is responsible for increased postural sway (Zemková and Hamar, 2014). In addition to fatigue and hyperventilation, also deterioration of functions of mechanoreceptors, proprioceptors, vestibular apparatus and visual cues, muscle damage, dehydration, hyperthermia, and dizziness have been identified as possible physiological mechanisms of post-exercise balance impairments. However, among a variety of studies evaluating the effects of exercise on postural balance control, only few of them were conducted under sport-specific conditions (Zemková, 2022). Therefore, more research is still needed to address this gap in the literature and aim research at investigation of postural sway response to sport-specific exercises. A better understanding of the physiological mechanisms of balance impairment after exercises performed under simulated fatigue induced protocol, close to conditions specific to a particular sport, has implications for designing smart exercise programs tailored to individual needs to improve athlete performance with high demands on postural stability and/or decrease their risk of injuries.

Assessment of balance in sport-specific positions

a) Postural sway during standing on supports of different width

Narrow area of support does not compromise the postural stability in gymnasts and ice-hockey players because of similar bases of support during bipedal standing.

b) Postural sway during two-handed and two-legged stances
The CoP velocity is approximately 10-times higher during two-handed than bipedal stance in gymnasts.

c) Postural sway during standing on supports of different height
Postural stability in mountaineers does not depend on the height of the standing base. However, postural threat plays a role in increased CoP velocity in physically active subjects (PE students) during stance above the ground (about 20 m).
d) Postural sway during standing with different ankle joint fixation
Skiers and snowboard performers have better medio-lateral stability while standing on an unstable surface with fixed ankle joints than PE students.
e) Postural sway during rifle shooting
Shooting performance in experienced shooters is not affected by increased CoP velocity during repeated shots.
f) Postural sway during free throw shots
More pronounced side-to-side CoP movement during repetitive free throw shots in basketball does not compromise their accuracy.
g) Postural sway during weight lifting
Sway trajectory during barbell squats with higher weights is less influenced in weightlifters than in amateur bodybuilders.

Assessment of balance after sport-specific exercises
a) Postural sway after rotational exercises
There is lower CoP velocity and a faster readjustment to baseline after rotational exercises in dancers and synchronised swimmers than in PE students.
b) Postural sway after judo falls
The additional trauma induced by judo falls does not enhance the negative effect of judo exercises on balance. However, a slower readjustment of postural sway to pre-exercise level after judo falls may be observed.
c) Postural sway after different forms of dancing performance
Post-exercise balance impairment is influenced by many factors, including the character of sport performance (e.g., aerobics, dancing, rock & roll), intensity of proprioceptive stimulation induced by different type of exercise (jumps vs. calf rises), height of the jumps (maximal vs. aerobic jumps), and their duration. However, in this case the postural sway increases only up to some point, after which no further increase its values can be observed, indicating no linear relationship between the level of proprioceptive stimulation and post-exercise balance impairment.
d) Postural sway after rebound jumps
There is a gradual increase in sway velocity after jumps dropped to 75% and 50% of 1MJ (previously established maximal height of the jump in non-fatigue conditions), whereas only

slight increase after jumps dropped to 25% of MJ may be observed. This indicates that post-exercise balance impairment is not linearly related to the level of proprioceptive stimulation.

e) Postural sway after intermittent and continual exercises

There are no differences in CoP velocity and speed of its readjustment after continual and intermittent exercise. However, more profound balance impairment is observed after both exercises of higher intensity. This indicates that rather than exercise mode, its intensity plays an important role in balance impairment. In both cases, chiefly more marked ventilation is responsible for greater postural sway, though the contribution of fatigue cannot be excluded.

f) Postural sway after the soccer match

Soccer match-induced fatigue increases drop jump ground contact time concomitant with the impairment of dynamic balance and agility performance when moving short distances. On the other hand, there are no significant changes in agility performance on longer movement distances, explosive power of lower limbs, static balance, speed of the step initiation and the soccer kick.

Assessment of balance after exercises simulating the demands of the given sport

a) Postural sway responses to exercises with different energy yield from anaerobic glycolysis while eliciting the same heart rate

Despite yieling the same heart rate response, abrupt more intensive and shorter exercise impairs the postural stability in an early phase of recovery more profoundly than longer stepwise exercise with a lower contribution of anaerobic glycolysis. This fact has to be taken into account in sports dependent upon post-exercise postural stability, such as biathlon, figure skating, rock and roll dancing, and so forth.

b) Postural sway response to exercises of moderate intensity with different duration

Impairment of balance after exercises in duration of 15 and 45 minutes may be associated with increased ventilation. However, more pronounced neuromuscular fatigue resulting from prolonged exercise of moderate intensity is very probably responsible for longer balance impairment when compared to exercise of the same intensity but shorter duration.

c) Postural sway response to different forms of resistance exercise

Impairment of balance in an early phase of recovery after resistance exercises is a consequence of more marked ventilation rather than fatigue. This effect is more evident after exercises performed with lower (squats and calf rises) than upper extremities (biceps curls and presses behind the neck).

d) Postural sway response to resistance exercises with different intensity of proprioceptive stimulation eliciting the same ventilation

Rebound jumps induce more profound impairment of balance than calf rises. This indicates that intensity of proprioceptive stimulation during resistance exercises has a negative effect on feedback mechanisms involved in postural control.

e) Postural sway response to different types of exercise eliciting the same ventilation

Presumably, mainly more profound proprioceptive stimulation during running is responsible for a greater increase in postural sway as compared to cycling.

f) Postural sway response to exercises with different forms of muscle contraction

Postural sway is only slightly higher after upslope than after level running, but its readjustment to pre-exercise level is substantially slower.

g) Postural sway response to „all-out" exercises with different activation of muscle fibers
There is a greater initial postural sway after cycling at higher than lower revolution rates. A more marked ventilation, rather than fatigue, is most probably responsible for more profound impairment of balance after isokinetic cycling at higher than at lower revolution rates.
h) The effect of maximal exercise on static and dynamic balance
The equilibrium and strategy scores assessed in static conditions do not differ significantly after maximal exercise on the cycle ergometer as compared to baseline, neither with eyes open nor with eyes closed. However, their values are significantly lower than prior to exercise under dynamic conditions with eyes closed as well as with sway-referenced vision. Based on sensory analysis, the vestibular system is more affected by exercise than the somatosensory system.

i) The effect of jumping on visual feedback control of body position

VISUAL FEEDBACK CONTROL OF BODY POSITION IS NEGATIVELY AFFECTED BY INTENSIVE REPEATED JUMPS. HOWEVER, AFTER REACHING SOME LEVEL OF DETERIORATION OF PROPRIOCEPTIVE FUNCTION, THERE IS NO FURTHER IMPAIRMENT OF SENSORIMOTOR PARAMETERS. SPECIFICALLY, THIS CONTROL IS MORE COMPROMISED IN THE ANTERO-POSTERIOR THAN IN THE MEDIO-LATERAL DIRECTION. IT SEEMS THAT INTENSIVE JUMPING AFFECTS SENSORY FUNCTIONS MORE PROFOUNDLY THAN MOTOR FUNCTIONS.

Assessment of balance after resistance exercises
Our findings (Zemková and Hamar, 2009) revealed that postural sway response to resistance exercise depends on following factors:
a) Exercise intensity (additional load used)
Post-exercise, in the form of squats, postural sway is not linearly related to an additional load used, i.e. its values after achieving some point only slightly rise (e.g., after squats performed with an additional load of 50% 1RM).
b) Rate of movement
Sway velocity more than doubles when explosive rather than normal squats are performed. Its values tends to increase with subsequent repetitions up to some point, after which a plateau or its slight decrease may be observed (e.g., after 9 reps with an additional load of 50% 1RM).
c) Number of repetitions and sets
Sway velocity increases rather proportionally to the number of reps and sets performed. However, there is no further rise in its values when some point is reached (e.g., after 4 sets of 15 reps with an additional load of 50% 1RM).
d) Muscle mass activated
As mentioned above, impairment of balance in an early phase of recovery after resistance exercises is a consequence of more marked ventilation rather than fatigue. This effect is more evident after exercises performed with lower extremities (squats and calf rises) than with upper extremities (biceps curls and presses behind neck).
e) Intensity of proprioceptive stimulation
As mentioned above, intensity of proprioceptive stimulation during resistance exercises has an important influence on feedback mechanisms involved in postural control (e.g., there is

a higher CoP velocity after jumps than after calf rises).

f) Type of exercise

There is no difference in the CoP velocity after calf rises performed with a higher additional load in fewer repetitions and those with a lower additional load in more repetitions, if both exercises elicit the same work. A slightly greater values after sustained stance on tiptoes with a higher additional load for a shorter time than after those with a lower additional load for a longer time may be observed. This indicates that postural sway response to an isometric exercise may depend on its duration and the additional load used.

Assessment of balance after sport-specific training

So far, several studies have been directed toward designing training programs including a variety of exercises (e.g., serial mechanical proprioceptive stimulation, task-oriented sensorimotor exercises, balance exercises combined with functional tasks, resistance exercises performed on unstable support surfaces) with aim to improve athlete's postural stability (Zemková, 2010). However, more sport-specific balance testing approach is still required to assess their efficiency (Zemková, 2011). Most current standard testing methods are not sensitive enough to distinguish between athletes of different ages and physical fitness, there are not sufficient to adapt the athlete's performance level and individual needs, and are not specific to the requirements of a particular sport and also in revealing the effect of training (Zemková and Hamar, 2018). Frequently used statistical significance in balance research does not imply that changes observed after the training are practically meaningful, or vice versa (Zemková, 2014a). Therefore, both *p* values and effect sizes should be used when interpreting results of cross-sectional and intervention balance studies.

The analysis of postural stability in 936 athletes (aged 6-47 years) of various sports (shooting, football, boxing, cross-country skiing, gymnastics, running, team games, wrestling, tennis, alpine skiing, rowing, speed skating, and figure skating) revealed that practicing any kind of sport is associated with improved postural stability in normal bipedal stance (Andreeva et al., 2021). However, it mainly depends on the athlete's age, and, to a lesser extent, on their sex, performance level, and they shoe features (Andreeva et al., 2020). Training programs incorporating general and sport-specific exercises that involve the use of postural and core muscles showed an improvement of body balance, back muscle strength, and endurance. However, there is controversy about whether the improvement in these abilities is translated into athletic performance. There is still a lack of research investigating the relationship of body balance and stability of the core with sport-specific performance. In particular, corresponding variables are not sufficiently specified in relation to functional movements in sports with high demands on postural and core stability (Zemková and Zapletalová, 2022). Our recent scoping review revealed the relationship between static and/or dynamic balance and criterion measures of athletic performance only in few sports, such as shooting, archery, golf, baseball, ice-hockey, tennis, and snowboarding (Zemková and Kováčiková, 2023). This may be ascribed to improved ability of athletes to perform postural adjustments in highly balanced task demands. However, the extent to which sport-specific exercises contribute to their superior postural stability is unknown. Although there is a good deal of evidence supporting neurophysiological adaptations in postural balance control induced by body conditioning exercises, little effort has been made

to explain balance adaptations induced by sport-specific exercises and their effects on athletic performance. While an enhancement in athletic performance is often attributed to an improvement of neuromuscular functions induced by sport-specific balance exercises, it can be equally well ascribed to their improvement by general body conditioning exercises. Therefore, the relevant experiments have yet to be conducted to investigate the relative contributions of each of these exercises to improving athletic performance.

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HOW THERAPY DOGS AFFECT CHILDREN'S MOOD?

Gökçe Akın[1*], H. İlhan Odabaş[1], Billur H. Yarsuvat[1]

[1]Halic University, Faculty of Sport Sciences
*Corresponding Author: gokceakin@halic.edu.tr

ABSTRACT

Interaction with therapy dogs enables individuals to express their feelings and thoughts. The aim of this study is to examine the effects of therapy dogs on children's moods. 17 children aged 6-9 years were included in the study. Mean age of the children was 7.18±1.31. In the one-hour physical activity with the therapy dog, the children had both emotional and physical contact with the dog. Games involving the dog were played. During the applications, natural observation was made. After the application, in the one-to-one interviews with the children, the moods of the children were taken through emotion cards and Self Report Form. According to the findings, the children stated that they felt happy during the application, and it was fun to get in touch with the dog. Observations have shown that children have no difficulty in communicating with the therapy dog. All the children touched and walked the dog. According to the observations, all children felt happy and the number of children who felt timid and scared decreased. As a result, interacting with the therapy dog positively affects the mood of children, motivates children's participation, and supports learning.

Keywords: Therapy Dog, Children, Mood, Affect, Physical Activity,

INTRODUCTION

The aim of animal-assisted interventions is to support the health of individuals through animals [1]. Horses and dogs have been used for many years to provide assistance to humans [2]. Dogs have had a significant impact on human life since they were domesticated. Throughout history, dogs have supported humans in tasks such as protection and hunting, as well as developing social skills [1]. In addition to psychopathological disorders such as autism [3], dementia [4], learning disability [5], they are also used to improve processes in the educational environment [6].

Dogs' ability to observe human reactions and understand human behavior enables them to relate, bond and communicate with humans. Communicating with a dog has positive physical and psychological effects for both children and adults [2]. Contacting with dogs decreases heart rate and cortisol levels, increases dopamine and oxytocin levels [7]. It also reduces stress, depression, and anxiety symptoms [8].

Unlike other domestic dogs, therapy dogs are trained to provide emotional support to people. Therapy dogs must complete a training and certification process dog to provide support to humans. Especially good-natured dogs that enjoy communicating with people can be raised as therapy dogs. Many mental health professionals use therapy dogs when working with their clients [9].

The effect of the accompaniment of a therapy dog to cognitive behavioral therapy sessions on anxiety and trauma disorders was examined. The accompaniment of a therapy dog to the therapy process has a decreasing effect on traumatic symptoms and anxiety levels of individuals [10]. The effect of therapy dogs accompanying medical therapies was also

evaluated. Orthopedic patients were visited with therapy dogs before physical therapy. Patients experienced a decrease in pain level and an increase in hospital satisfaction [11].

In a study with children with Down syndrome and learning disability, therapy dog sessions had a positive effect on visual attending, response behaviors, verbal, and nonverbal initiation. Children attended sessions with a therapy dog and an inanimate dog. When real dogs and inanimate dogs were compared, it was observed that children were more attentive in the environment with real dogs. Dogs give reactions and respond, and it increases the communication between the children and the dogs, and it makes the children feel safe [5]. Therapy dogs helps children in social engagement. They dogs have enabled children with autism to communicate and develop emotional bonds with others. Children's participation in daily life has also increased through therapy dogs [12].

Interventions involving therapy dogs seem to have an impact on reactions after traumatic events. Participants who are exposed to a traumatic movie interacted with the dog, anxiety levels and negative affect decreased, while positive affect increased [13].

THERAPY DOGS IN CLASSROOMS

Studies using therapy dogs in educational settings have found that dogs have a positive effect on the educational environment. Students read books to dogs through a dog assisted reading program in a study conducted with elementary school students. It was observed that children who were afraid of dogs at the beginning of the study interacted with dogs. Reading performance of kindergarten children was higher than the children in the control group. In addition, the educational staff's concerns about the therapy dog at the beginning of the study were reduced and they agreed with the continuation of the dog assisted reading program [14]. Therapy dogs supports children in educational environment by improves peer interaction, reduces stress, anxiety, and blood pressure. They encourage students for reading aloud, and active participation in the class [15].

Therapy dogs in the classroom have a positive impact on students' mood [16], as well as on their academic achievement and stress levels [14]. The presence of a therapy dog in the school environment is decisive for the emotional state of the students. Elementary school students who interacted with dogs had positive attitudes towards dogs and positive moods. The presence of a therapy dog at school may have a protective effect on mental health [24]. Therapy dogs have a mood improving effect on elementary school students. Interaction with the dogs provides a source of emotional support for the students [17].

Therapy dogs are also used in studies involving university students. Especially considering that final exams increase stress levels, it is necessary to develop interventions that enable students to manage their stress. The presence of a therapy dog on campus reduces the perceived stress level of university students during the final exams [18]. In a similar study, university students were provided with interventions involving therapy dogs during their final exams. It was observed that therapy dog interventions led students to experience positive affect [19]. Exposure of university students to therapy dogs for 20 minutes increases their well-being and decreases their anxiety levels. This method, which has a positive effect on students' emotional states, is cheap and accessible [16].

Trammel (2019) concluded that therapy dogs had no effect on the memory of university students, but positively affected their affect [20]. When the participants who participated in the therapy dog intervention and the participants who watched the dog video were compared, it

was observed that the anxiety levels of the individuals who participated in the therapy dog intervention decreased, and their positive affect increased [21].

There are studies evaluating the effect of therapy dogs on people with physical and psychological disorders in hospitals, educational settings, prisons [14, 22, 23]. In these studies, the physical and psychological effects of therapy dogs on people were examined. However, studies with therapy dogs in Turkey are limited. It is thought that the insufficient number of therapy dogs in the country is related to this situation. The aim of this study was to evaluate how play-based activities with a therapy dog affect the mood of children aged 6-11 years.

METHOD

Research Model

This is an experimental study including quantitative and qualitative methods. The data evaluated within the scope of the research were obtained through self-report and observation.

Participants

Participants are students attending Halic University Kids Academy summer school. The sample of the study includes 5 boys and 12 girls total 17 children between the ages of 6-9. The mean age of the children was 7.18±1.31 years.

Children were contacted after obtaining the necessary ethical permissions from the Halic University Ethics Committee.

Inclusion Criteria:

- Consent forms were obtained from the parents.
- Children are not allergic to animals.

Children without parental consent were excluded from the study.

Data Collection Instruments

An observation form and a self-report form were used to assess the mood of the children.

The observation form includes the children's first reaction to the dog, physical reactions (touching or not touching the dog) and emotional reactions (surprised, happy, scared, excited, timid). Observations were made by 3 teachers.

The self-report form includes questions about the children's interaction with the dog. The questions were asked at the end of the activity to the children by a clinical psychologist. The form includes statements such as "I liked the dog very much", "I remember the dog's name", "I hugged the dog". Participants answer yes or no to these statements. During the interview, the children were asked how the activity with the therapy dog made them feel. Children were shown emotion cards containing different emotions and asked to choose one.

Process

After obtaining the necessary permissions for the children, the children participated in the one-hour therapy dog-assisted application. The application was conducted by a dog trainer, a child

development specialist, and a clinical psychologist. At the beginning of the application, an ice breaker game was played in the circle with the children. Then the dog trainer explained how dogs should be pet. The children took turns to pet and touch the dog. After this practice games involving the dog were played, children walked the dog, and pictures were drawn about the dog. During the application, three observers observed different children. At the end of the application, the clinical psychologist conducted individual interviews with the children.

DATA ANALYSIS

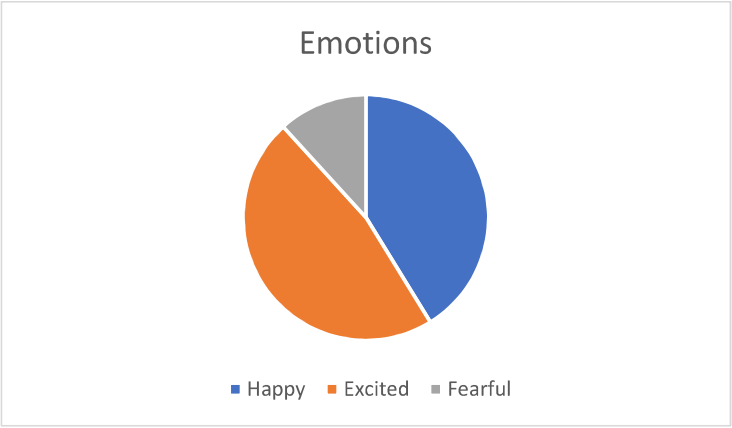
IBM Statistical Package for the Social Sciences 24 (SPSS) was used to evaluate the data. The information obtained from the observation form and self-report form was transferred to SPSS and descriptive statistics were made.

RESULTS

12 of the children in the study were girls (70.6%) and 5 were boys (29.4%). The mean age of the participants was 7.18±1.31 years. Findings of self report form of the children about the therapy dog are given below.

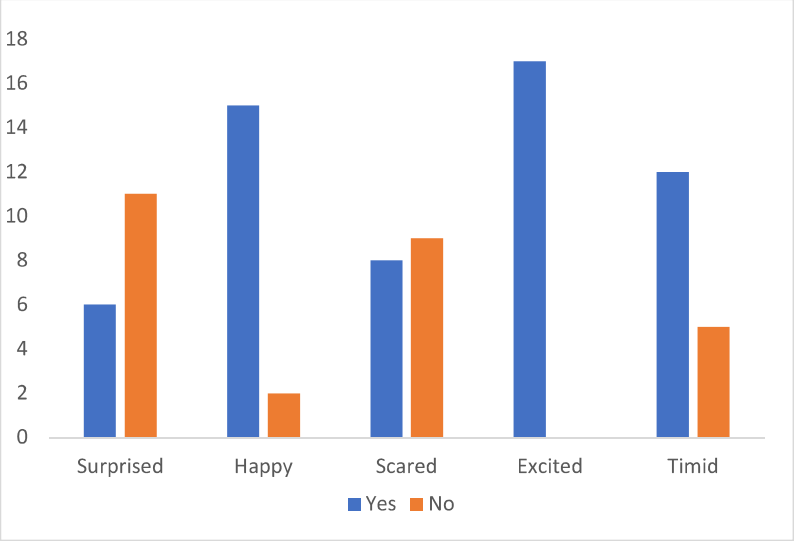
Before the children and the therapy dog met, the children were asked how they felt about the dog. at the beginning of the application. 7 children answered happy (41.2%), 8 children answered excited (47.1%), 2 children answered scared (11.8%) (Figure 1).

Figure 1. Mood of the Children Before the Application



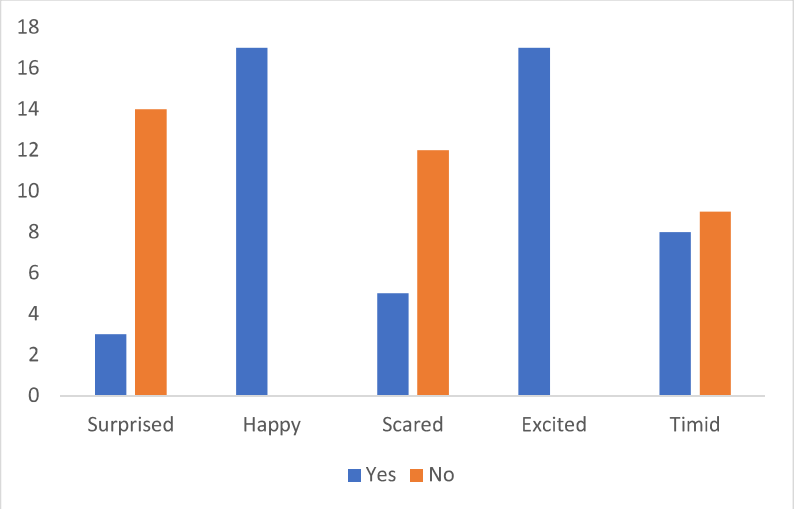
The children's first interactions with the therapy dog and their moods during all activities were observed through natural observation, and the relevant findings are presented in the Figure 2 and 3.

Figure 2. The Mood of Children's First Reaction



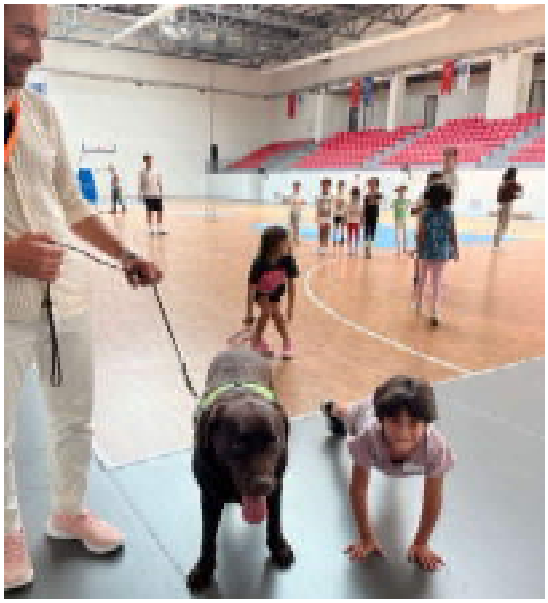
When the children first encountered the dog, 35.3% were surprised, 88.2% were happy, 47.1% were scared, 100% were excited, 70.6% were timid (Figure 2).

Figure 3. General Mood of the Children



The general mood of the children throughout the activity is as seen in figure 2; 82.4% were surprised, 100% were happy, 5% were afraid, 100% were excited, 8% were timid (Figure 3).

When physical reactions were analysed, it was observed that all of the participants touched the therapy dog.



In the interviews held after the application, the following questions were asked about the children's interactions with the therapy dog.

In the interview with the psychologist, questions with yes or no answers were asked, and children's opinions about the therapy dog were obtained. All of the children answered 'yes' to the statements 'I liked the dog very much', 'I was able to walk side by side with the dog', 'I was able to walk the dog on a leash', 'I played games with the dog', 'I was able to touch the dog', 'Did you learn to pet the dog?'. The phrases used by children during the interview are as follows.

"I'd like to spend more time with Mocha."

"I want to play with Mocha."

"I would like Mocha to come to school all the time."

"I want to walk the dog too."

"I was a bit scared at first, but then it was great fun.''

As a result, children's interaction with the therapy dog made them happy and they wanted to spend more time with the dog. According to their phrases, some of them were scared at the beginning of the activity. However spending time with the dog change their emotion to happiness.

DISCUSSION

The aim of this study was to evaluate the effect of therapy dogs on children's mood. One-hour play-based application with a therapy dog was conducted and the effect of the therapy dog on children was evaluated through naturalistic observation and self-report form. According to the findings, a conclusion was reached about the moods of the children.

When the children were asked how they felt at the beginning of the intervention, they answered excited, happy, and scared. The most common response was 'excited'. It is observed that excitement was a positive emotion. Children who interacted with the therapy dog were enthusiastic and motivated to participate in the application. According to the results of naturalistic observation, it was concluded that the children who felt confused, scared, and timid after the intervention decreased, and all of the children felt happy. It was observed that all of the children felt excited at the beginning and throughout the intervention. In a study, it was concluded that therapy dog-based interventions have a positive effect on children's psychological well-being and mood [16]. In our study, the accompaniment of the therapy dog to the application led to a decrease in the participants' negative emotions and an increase in their positive emotions. In the same study, it was concluded that the application in which the dog was alone was more beneficial compared to the application in which the dog was accompanied by handler [16]. This was not the case in our study. Our application was managed in the presence of a dog trainer, a child development specialist and a psychologist may be a reason that led children to experience positive emotions. Another study including 4th grade elementary school students concluded that therapy dogs have a mood improving effect on children [24]. In our study, therapy dogs have a similar effect on children aged 6-9 years.

In the interviews with the children, it was concluded that the children made positive statements about the therapy dog. They stated that they interacted with the dog and wanted to participate in different applications involving the therapy dog. The presence of the therapy dog in the educational environment may increase children's motivation to participate in practices in the school environment [25]. In this study, the presence of the therapy dog not only positively affected the mood of the children, but also enabled them to participate in the games played during the application. The presence of a dog in academic environment can encourage children to be active during class [15].

CONCLUSION

The presence of dogs in the school environment has a positive effect on children's mood. Interacting with the dog increases positive affect. In addition, positive thoughts about the therapy dog also increase. The small number of participants in this study may negatively affect the generalizability of the results. In addition, there is a need for studies evaluating different variables on how the therapy dog affects the educational environment. Seeing how academic skills are affected in addition to mood may enable the inclusion of therapy dogs in the school environment. It is observed that there are limited studies using therapy dogs in Turkey. The positive effect of dogs on children may pave the way for the therapy dog to accompany the applications and academic studies.

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EVALUATION OF PARENTAL ATTITUDES OF CHILDREN WHO DO EQUESTRIAN SPORT

Dr. Billur H. Yarsuvat[1]*, Dr. H. İlhan Odabaş[1], Res. Asst. Gökçe Akın[1]
[1]Halic University Sports Sciences Faculty, Istanbul
*Corresponding Author: billuryarsuvat@halic.edu.tr

ABSTRACT

The purpose of the study was to examine the attitudes of parents of children who ride horses. A total of 79 parents of children participating in pony riding competitions between the ages of 34-55 years with a mean age of 42.74±4.61 years, 24 males and 55 females, participated in the study. In the study, a 5-point Likert-type ‘‘Parental Attitude Scale’’ consisting of four sub-dimensions (democratic, authoritarian, permissive, protective) and 46 items was used to evaluate the parent-child relationship. Among the four sub-dimensions, the lowest score was democratic attitude, the highest score was authoritarian attitude and there were significant correlations between all sub-dimensions ($p<0.05$). There was a negative correlation between democratic attitude and authoritarian (.-548) and permissive attitude (.-251) ($p<0,05$). Parental attitudes of parents whose children compete in pony riding competition; authoritarian, permissive, protective attitudes are higher and democratic attitudes are lower.

Keywords: Parental Attitudes, Authoritarian Attitude, Pony Riding Competition, Equestrian Sport, Children.

INTRODUCTION

Equestrian sport is a sport of using the horse and pony in a good, appropriate and forceful way. While the horse walks with a certain tempo, it should take its steps in equal length and time [1]. Equestrian competitors should show their performances with the horse in the best way. Showing superior performance in equestrian sports is associated with sportive and technical skills [2]. Equestrian sport can be done by children. From the age of 5, they participate in competitions with pony and from the age of 14 with horses.

The first place where children meet the world is their families. Parents have an important role in the development of their children. Parents’ attitudes towards different events are decisive in terms of children’s behavior [3, 4, 5]. Parents affect children’s experiences related to sports [6] Parental participation in sports ensures the children’s participation in sports [7].

Parental attitudes include parents’ attitudes towards their children. According to Baumrind (1966), there are democratic, authoritarian, permissive and protective parental attitudes. Parents with democratic parental attitudes communicate effectively with their children, listen to their them and are patient. They attach importance to the child’s independence. Instead of punishing the child, they give the child space to correct his/her mistakes. Authoritarian parents set strict rules for their children and want children to follow these rules. They show a punitive and controlling attitude. On the other hand, permissive parents provide children with more freedom than necessary. They do not control their children. Children may have problems with self-control because they have not learnt the limits. Protective parents pay too much attention to their children. Therefore, children do not develop self-confidence. Their skills develop slowly compared to their peers [8].

The relationship between parental attitudes and children's participation in sports has been evaluated in different sports branches. When the relationship between parental attitudes and the child's experiences in soccer was evaluated, it was concluded that maternal support had a positive relationship with the child's enjoyment of sport. When parental involvement is high, the child's co-operation with the coach decreases [9].

Variables related to parents may vary according to gender. The mother's physical activity history positively affects the participation of the girl child in sports [10].

Parental attitudes are determinant in terms of achievement motivation of individuals. There is a positive relationship between parental attitude and sport-specific achievement motivation. There is a positive relationship between motivation and protective attitude and authoritarian attitude [11].

Horses are used by children for both sports and therapy purposes. Therapy with horses increases the quality of life of children and improves their health [12]. Since the use of horses for therapeutic purposes supports the psychological well-being of children, a positive perception is formed by parents. Parents support their children to ride horses [13]. However, the use of horse riding for sports purposes may be seen as risky by parents. Parents with equestrian athlete children may think that their children are at risk and may have difficulty coping with negative emotions [4]. Since parents' perception of sport determines the continuity of children in sport, the parental factor has an important role in children who do sport [14].

The aim of this study is to examine the attitudes of mothers and fathers of children engaged in equestrian sport. In the literature, it is observed that parental attitudes are not examined specific to equestrian sport. Since the attitudes of parents towards sport can affect the children's well-being and sport performance, it seems important to evaluate the parental factor [12]. Therefore, this study targets the parents of children who are involved in equestrian sport. The findings obtained can be a guide for the training of parents and new research to be conducted.

METHOD

Research Model

This is a descriptive research. The questionnaire was answered by the parents of the children participating in equestrian competition.

Participants

Participants were mother and father of the children who attend equestrian competition. Children do obstacle jumping with pony. 24 males and 55 females participated in the study. Mean age of the participants were 42.74±4.61.

Inclusion Criteria

1. Participants should be between 20-60 years of age.

2. Participants have a child who participates in horse racing.

3. Participants participate in the study voluntarily.

Data Collection Instruments

In this study, Information form and Parental Attitude Scale was used. The Information Form includes demographic questions such as age, gender, educational status, and occupation. Parental Attitude Scale was developed by Karabulut Demir and Şendil (2008) to measure the attitudes of parents towards their children. The scale consists of 4 sub-dimensions and 46 items: democratic (17 items), authoritarian (11 items), overprotective (9 items) and permissive (9 items).

The items are in the form of behavioral patterns and this is a 5-likert type scale. For each item, one of these options is marked: "Always like this" gets 5 points; "Mostly like this" gets 4 points; "Sometimes like this" gets 3 points; "Rarely like this" gets 2 points and "Never like this" gets 1 point. Getting a high score from a dimension means participant's attitude is higher in that dimension. The Cronbach's alpha reliability coefficients of the dimensions were .83 for the democratic dimension, .76 for the authoritarian dimension, .75 for the overprotective dimension and .74 for the permissive dimension [15].

Process

Parents were contacted after ethics committee permission was obtained. Parents were asked to answer the Information Form and Parental Attitude Scale used in the research. The scale was answered in a calm and quiet environment in the presence of the researcher.

Data Analysis

The data obtained were transferred to IBM SPSS 24 programme and descriptive statistics were performed.

RESULTS

The participants in the study consisted of 55 women and 24 men. The age range of the participants was 34-55 years. The mean age is 42.74±4.61 years. The frequency values including the demographic information of the participants are given in Table 1.

Table 1. Frequency Analysis of Information on Participants

N=79	**N**	**%**
Gender		
Female	55	69.6
Male	24	30.4
Gender of the Children		
Boy	18	22.8
Girl	61	77.2
Education Level		
High School	11	13.9
University	48	60.8
High School	20	25.3
Sports Background		
Yes	57	72.2

No	22	27.8

Descriptive statistics findings of the subscales of the Parental Attitude Scale are shown in Table 2. Authoritarian parental attitude has the highest mean value (M= 3.84).

Table 2. Descriptive Statistics of the Parental Attitude Scale

N= 79	Mean	SD.	Min.	Max.
Democratic	1.54	0.44	1	2.82
Authoritarian	3.84	0.43	2.55	4.55
Protective	3.01	0.87	1.22	8.44
Permissive	3.69	0.51	2.44	4.78

The relationships between the subscales were calculated with Pearson correlation coefficient. The findings are presented in Table 3.

Table 3. Correlations Between Sub-Scales

N=79		**1**	**2**	**3**	**4**
1. Democratic	**r**	1	**-0.548**	0.058	**-0.251**
	p		**0.00**	0.609	**0.025**
2. Authoritarian	**r**	**-0.548**	1	0.083	**0.325**
	p	**0.00**		0.470	**0.003**
3. Protective	**r**	0.058	0.083	1	**0.281**
	p	0.609	0.470		**0.012**
4. Permissive	**r**	**-0.251**	**0.325**	**0.281**	1
	p	**0.025**	**0.003**	**0.012**	

It was concluded that the Cronbach alpha value of the scale in this sample was 0.52. Parental Attitude Scale has low reliability in this sample.

Discussion

The aim of this study was to evaluate the parental attitudes of children engaged in equestrian sport. According to the findings of the study, the subscale with the highest mean value is authoritarian attitude. The subscale with the lowest value is democratic attitude. Parents with authoritarian attitude have strict rules and exhibit punitive behaviors [8]. Parental

attitudes of children engaged in equestrian sport may be sport specific. When the personality traits of individuals engaged in equestrian sport were evaluated, the younger generations evaluated themselves as less agreeable, less conscientious, and more neurotic. Especially in more risky sports branches, less agreeable personality traits are observed. [16]. Equestrian sport by children is perceived as risky by parents (Sanchez, 2017). Variables such as parents' perception of sport and personality traits of the child may lead to a result such as high authoritarian parental attitude in equestrian sport. A positive relationship was found between achievement motivation and authoritarian attitude (Eri, 2018). Authoritarian attitude may motivate athletes in terms of achievement. However, research in this field is limited.

Equestrian sport is perceived as risky by parents [4] and requires certain rules [17] may have led to more authoritarian attitudes of parents. Not accepting mistakes, having strict rules and excessive control of the child may prevent mistakes and accidents that may occur in equestrian sport. Therefore, this parental attitude may be a parental attitude specific to this sport. However, there is a need for in-depth evaluation of equestrian sport and authoritarian parental attitude.

In this study conducted on the parents of children engaged in equestrian sport, a negative relationship was found between democratic parental attitude and authoritarian parental attitude and permissive parental attitude, a positive relationship between authoritarian and permissive, and a positive relationship between protective and permissive. It is possible to say that there are relationships between different parental attitudes in a sample of athlete families.

Conclusion

In the study, parental attitudes of parents of children who do equestrian sport were evaluated. Parental attitudes have an important role in children's lives because parents have a determining role in children's participation in sport [18] There are no studies specific to the parents of equestrian sporting children in the literature. Therefore, the high level of authoritarian attitude in this sample is an important finding. New research is needed to discover the variables explaining the role of authoritarian attitude in equestrian sport. Applications with the parents may be conducted to improve both sports performance and psychological well-being of children who do equestrian sport.

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EVALUATION OF BODY COMPOSITION AND HEALTH-RELATED RISK FACTORS OF SMOKER AND NON SMOKER BY GENDER

H. İlhan Odabas[1*], Gökçe Akın[1] , Billur H. Yarsuvat[1]

[1]Halic University Sports Sciences Faculty, Istanbul

*Corresponding Author: ilhanodabas@halic.edu.tr

Abstract

The aim of the research is to evaluate the body composition and health risks of smokers and non-smokers who do sports for health, according to gender. A total of 7813 people, 4392 women and 3421 men, aged 20-60, with an average age of 32.93±9.19 years, were included in the study. The research is a cross-sectional study based on data from individuals attending a sports health club in Istanbul between 2006 and 2016.

As a result, 42.4 percent of women and 39.6 percent of men smoke, and 57.6 percent of women and 60.4 percent of men do not smoke. Significant differences were observed between smoking and non-smoking men and women in terms of fat percentage, BMI, waist-hip ratio, systolic and diastolic pressure, and waist circumference ($p<0.05$).

Keywords: Smoking, Body Composition, Health.

1. Introduction

Smoking is a global problem that threatens not only the individual but also the health of the society [1]. Cigarette smoking in the world and in Turkey is increasing every year [2]. According to 2022 data in Turkey, 31% of men and 7.9% of women aged 15-24 years, 52.9% of men and 24.1% of women aged 25-34 years, 45.1% of men and 18.4% of women aged 45-54 years, 37.8% of men and 12.8% of women aged 55-64 years, 19.9% of men and 6.1% of women aged 65-74 years smoke every day. The influence of friends and curiosity are the reasons for smoking [3].

Smoking is quite common among individuals who do sports for their health, even though they know that it is harmful [4].

There are individuals in the society who believe that smoking is good for them and who think that they will suffer social loneliness and get fat if they quit smoking [5, 6, 7].

However, as reported in many scientific studies, smoking not only decreases the quality of life but also increases cardiovascular risks, which is one of the main causes of many fatal diseases [8, 9]. Cardiovascular diseases refer to diseases related to the heart and vascular system and are one of the leading causes of death worldwide [10, 11]

Smoking contains many chemicals that harm the body. Nicotine is the main active ingredient in tobacco smoke and causes narrowing of the vessels, increasing blood pressure. This increases stress on the cardiovascular system and leads to hardening of the arteries [12, 13]

At the same time, cigarette smoking can negatively affect cholesterol levels and accelerate plaque deposition on vessel walls [14]. Smoking greatly increases the risk of heart attack, stroke, atherosclerosis, and other cardiovascular problems and often causes the disease to occur at an earlier age [15]. This means that smoking is not only a major burden on individual health, but also on health systems and economies [16].

Body composition is an important component of an individual's health and physical fitness profile that can be affected by environmental (social and

cultural), genetic and ethnic origins, as well as age and gender [17, 18, 19]. The effects of smoking on human health and body composition have been researched for many years and have become a proven reality [20, 21]. The effects of smoking may vary from person to person, but it is generally recognized that smoking has a negative impact on health and body composition [22, 23, 24].

Basal metabolic rate increases, appetite may decrease, and this may lead to weight loss [25]. On the other hand, smokers may have difficulty controlling their appetite because of nicotine and other harmful chemicals, which may lead to excessive weight gain [26]. There is not much information that smoking has a direct negative effect on muscle mass. However, smoking has detrimental effects on the respiratory system, and this can affect the ability to perform physical activity and the oxygen uptake of muscles. This may affect muscle mass in the long term [27, 28]

Smoking is an important health issue for athletes because it can negatively affect sports performance and general health. Athletes who smoke often have reduced performance and an increased risk of respiratory problems. Furthermore, smoking habits can limit the benefits of exercise and training [29]. Smoking is a habit that harms one's own health and the health of those around them. People who have a smoking habit start to see positive changes in health and body composition after quitting this habit [30].

Many studies have been conducted on smoking [31, 32, 33].

There are findings that body composition differs in smokers [34, 35, 36]. However, research on smoking in individuals who exercise and do sports is quite limited. This is a cross-sectional study conducted among smokers and non-smokers who go to sports clubs for health and exercise in Istanbul between 2006 and 2016, highlighting the effects of smoking on health risks and body composition in individuals.

The purpose of this study; to evaluate the effect of gender on smoking, body composition and health risks of individuals doing sports. Reducing or quitting smoking is vital for improving the health of both individuals and societies. It is thought that the results of this research will be beneficial in increasing awareness and drawing attention to the dangers of smoking once again.

2. Materials and Methods

This is a retrospective, comparative, and cross-sectional study.

2.1. Participants

The data of the study consisted of male and female participants aged 20-60 who attended a health sports club in Istanbul between 2006 and 2016. Individuals under 20 years of age and over 60 years of age, pregnancy, amputation, and situations that did not meet the bioelectrical impedance measurement criteria were ignored in the study.

2.2. Data Collection Instruments

Health risk screening

Members coming to the health club were accepted according to the appointment system. Risk assessment was performed face-to-face using special software developed by the researcher. Information regarding family history, diseases, sports and nutritional habits, medication, smoking and alcohol use was obtained. Resting blood pressure, anthropometric and body composition measurements were then taken.

Anthropometric Measurements

All anthropometric measurements were

performed according to the Heath & Carter Anthropometric Reference Manual [37]. Height was measured using a height scale (0.1 cm precision) in shorts, t-shirts and bare feet. Body weight MC-980A; Measured using the Tanita, Tokyo, Japan scale.

BMI

It was calculated according to the body mass index (weight/height2) formula. Classified according to the recommended criteria of the World Health Organization (WHO) [38]. Underweight< 18.4 kg/m²; normal 18.5-24.9 kg/m²; Pre Obesity 25.0-29.9 kg/m²; Obese 30.00-34,9 kg/m²; Over Obese ⩾35 kg/m².

Body Composition

A multi-frequency (1, 5, 50, 250, 500 and 1000 kHz) bioelectrical impedance analyzer (BIA) (MC-980A; Tanita, Tokyo, Japan) was used to assess body composition parameters (percent fat, lean body weight, fat weight, total body water, intracellular fluid, extracellular fluid) and body weight. The surface of the hand electrode was placed in contact with each of the 5 fingers, while the participant's heel and forefoot were placed on the circular shaped foot electrode. Participants' arms and legs were tense to avoid contact with other body parts during measurements.

Blood pressure

Normal blood pressure was taken as <120 mmHg (SBP) and <80 mmHg (DBP). Blood pressure values of 120-139 mmHg (SBP) and 80-89 mmHg (DBP) were classified as prehypertensive. Blood pressure of 140 mmHg (SBP) and above and 90 mmHg (DBP) and above were classified as hypertension.

2.3. Process

After the risk assessments of the individuals, anthropometric measurements and body composition measurements were measured with minimal clothing (shorts, bodysuit, etc.) and bare feet. They were asked to have eaten at least 2 meals ago and to avoid heavy exercise before taking measurements. All measurements were taken by the same person.

2.4. Data Analysis

SPSS version 24.0 statistical software package was used to perform statistical analyses. Descriptive statistics regarding mean, standard deviation and standard error were used to examine the data. Normality distribution of the data was made and The Independent Samples t Test was used for pairwise comparisons of normally distributed data. Data were evaluated within the $p<0.05$ confidence interval.

3. Results

3421 male and 4392 female participants participated in the study. Mean age of the participants is 32.93 ± 9.19 years. Information about the participants is given in Table 1.

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Table 1. Frequency Analysis of Information on Participants

	Men		Women	
N=7813	N	%	N	%
Smoking				
Yes	1355	39.6	1864	42.4
No	2066	60.4	2528	57.6
Number of Cigarette in a day				
1-5	429	12.5	710	16.2
6-10	279	8.2	464	10.6
11-20	464	13.6	590	13.4
21 and more	183	5.3	100	2.3
Non-smoker	2066	60.4	2528	57.6
Alcohol Use				
Yes	1107	32.4	1095	24.9
No	2314	67.6	3297	75.1
Drug Use				
Yes	490	14.3	816	18.6
No	2931	85.7	3576	81.4
Regular Exercise				
Yes	3171	92.7	3677	83.7
No	250	7.3	715	16.3
BMI (kg/m²)				
18.4 and lower	11	0.3	278	6.3
18.5-24.9	1383	40.4	3348	76.2
25-29.9	1657	48.4	610	13.9
30-34.9	310	9.1	113	2.6
35	60	1.8	43	1
Systolic Blood Pressure (mmHg)				
Above 140	333	9.7	84	1.9
139-130	654	19.1	227	5.2
129-120	1089	31.8	535	12.2
Below 119	1345	39.3	3546	80.7
Diastolic Blood Pressure (mmHg)				
Above 90	226	6.6	68	1.5
89-80	855	25	392	8.9
Below 79	2340	68.4	3932	89.5

According to results, there's a significant difference between smoker and non-smoker women in fat %, lean body mass, systolic blood pressure, resting heart rate and waist circumferences ($p<0.05$). There's a significant difference between smoker and non-smoker men in fat %, lean body mass, systolic blood pressure and resting heart rate ($p<0.05$) (Table 2).

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Table 2. Comparison of Smoker and Non-Smoker Women and Men for Body Composition

	Female n=				Male n=			
	Smoker 1864	Non Smoker 2528	t	p	Smoker	Non Smoker	t	p
Body Mass Index	22,507	22,342	1.572	0.116	26.21	25.875	2.950	**0.003**
Fat%	28,934	29,333	-2.125	**0.034**	20.422	20.506	-0.415	0.678
Fat Mass	18,094	18,170	-0.377	0.706	17.494	17.278	0.884	0.377
Lean Body Mass	42,847	42,108	5.573	**0.000**	65.730	64.889	3.401	**0.001**
Systolic blood pressure	110,245	109,480	1.966	**0.047**	123.061	123.869	-1.910	0.056
Diastolic blood pressure	68,530	768,915	-1.472	0.141	74.607	75.632	-3.151	**0.002**
Resting Heart Rate	76,642	75,621	3.325	**0.001**	73.387	71.293	5.616	**0.000**
Waist circumferences	71,709	71,077	2.662	**0.008**	88.925	87.953	3.228	**0.001**
Waist to Hip Ratio	0,837	0,843	-0.790	0.430	0.89	0.87	0.646	0.518

4. Discussion

In this study, sex differences in body composition of smoker and non-smoker individuals are investigated. There were significant differences between smoker and non-smoker women in fat %, lean body mass, systolic blood pressure, resting heart rate and waist circumferences. Also, there were significant differences between smoker and non-smoker men in BMI, lean body mass, diastolic blood pressure, resting heart rate and waist circumferences. The fact that the participants included in the study were exercising regularly may have affected the findings. The findings will be discussed in this section.

Body Composition Parameters and Smoking

The aim of this study was to evaluate body composition in male and female smokers and nonsmokers. Body composition changes associated with smoking may result in mortality. Smoking affects the body composition of men and women [40]. Studies evaluating body composition in smokers and non-smokers according to gender are limited.

It is known that women's smoking rates are increasing, and they have various motivations for smoking. These motivations include losing weight, managing stress, and drawing a successful female image [41]. Women's smoking causes differences in their body composition. Body composition parameters differ in smokers and non-smokers.

Body composition changes in men may be more than in women. Increases in waist circumferences and BMI have been found to be higher in male smokers than in female smokers. In addition, mortality rates are also higher [40]. The higher BMI of men may be due to the increase in visceral fat with andropause [42, 43].

BMI and Smoking

Individuals who smoke have unhealthy habits. Lack of physical activity and not consuming fruits and vegetables are common in smokers [44]. In a study, it was concluded that smokers had low BMI and high waist to hip ratio [45]. Unhealthy lifestyle has a positive relationship with tobacco use. In addition, BMI and waist to hip ratio increased as tobacco use increased [46]. In our study, lean body mass and waist circumferences were higher in women who smoked. BMI, lean body mass and weight circumferences were higher in male smokers. This may be explained by the unhealthy lifestyle of smokers [44]. Since smokers do not engage in physical activity and do not have a healthy diet, an increase in weight, BMI, lean body mass and waist circumferences may have occurred [47].

In a different study, it was concluded that waist circumference was higher in smokers and waist circumference increased as the number of cigarettes smoked in a day increased [48]. It is known that smoking leads to fat in the waist region. This may explain the higher waist circumference of male and female smokers in our study. Smoking increases the waist and thigh circumferences of individuals [49].

When the reasons for higher BMI in smokers are evaluated, it is observed that poor weight control is one of these reasons. Emotional vulnerability causes individuals to be unable to control their weight [50]. Smoking is used as a tool that enables individuals to cope with events [51]. When individuals with underdeveloped emotion management skills use cigarettes as a means of emotion regulation, differences in body composition occur.

Body Fat and Smoking

Body fat may differ in smokers. There is evidence that smokers have more fat. Nicotine can lead to the accumulation of fat. Therefore, it is observed

that body fat is more in smokers [48]. However, in our study, fat % of non-smoking women was found to be higher than smokers. Nicotine may reduce appetite by increasing energy expenditure, which may reduce the adiposity of individuals [52]. In this study, the low body fat in non-smoking women may be explained by the fact that nicotine increases energy expenditure.

Resting Heart Rate and Smoking

Smoking may be a determinant of resting heart rate and cardiovascular diseases [53]. Nicotine has an increasing effect on resting heart rate. After smoking cessation, resting heart rate also decreases [54]. In our study, it was concluded that resting heart rate was higher in male and female smokers. This finding is consistent with the literature [55].

The increase in resting heart rate leads to deterioration of heart rhythm and narrowing of arteries. Therefore, smoking leads to increased blood pressure and cardiovascular diseases.

Blood Pressure and Smoking

In our study, it was observed that systolic blood pressure was higher in female smokers and diastolic blood pressure was lower in male smokers. In the literature, it was concluded that blood pressure increased in smokers [56, 57]. It is thought that blood pressure increases because smoking causes the heart to work more [54]. Increased heart rate and hypertension are observed in smokers [56].

5. Conclusion

In this study, body composition was evaluated in male and female smokers, and it was found that smoking affected body composition. The sample of the research consists of individuals who exercise regularly. Thus, it was possible to observe the effect of smoking on body composition in individuals exercising. In this context, the research will contribute to the literature. The large number of samples is also one of the strengths of the study. It is known that smoking is associated with cardiovascular diseases. Based on this study, studies can be carried out to help individuals quit smoking with both clinical and academic applications.

As a result, smoking causes indirect effects on muscle mass and fat mass. But these effects are also linked to health problems and lifestyle factors caused by smoking habits. Smoking is a habit that harms your health and therefore cannot be recommended for a healthy lifestyle and body composition. It is important for smokers to quit smoking and adopt healthier lifestyle choices. The health hazards of smoking are a serious issue that requires further research and awareness, and we believe this will be an important source of information for anyone considering or wanting to quit smoking.

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ANALYSIS OF AGILITY AMONG COLLEGE MEN BASKETBALLVOLLEYBALL AND HANDBALL PLAYERS

Dr. E.GOPALAKRISHNAN,
Director of Physical Education, Prof. Dhanapalan College of Science and Management,Chennai, Tamilnadu.

ABSTRACT

The purpose of this study was to compare the agility among college men basketball, volleyball and handball players. To achieve this purpose of the study, twenty basketball players, twenty volleyball players and twenty handball players who represented Inter College were selected as subjects. The age of subjects were ranged between 18 to 24 years. The following variable agility was selected as criterion variable.The data were collected for all subjects on agility by using shuttle run. The one way analysis of variance was used to find out the significant difference among college men basketball, volleyball and handball players. The Scheffe's test was used as a post hoc test to find out the paired mean differences, if any. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. The results of the study showed that there was a significant difference among college men basketball, volleyball and handball players on selected criterion variable and agility.

Keywords: agility, basketball, volleyball, handball

INTRODUCTION

According to Clarke, “Physical fitness may be defines” as the ability to carry out daily tasks with vigour and alertness, without under fatigue and with amble energy to enjoy leisure time pursuits and to meet emergencies.

METHODOLOGY

The purpose of the study was to compare the agility among college men basketball, volleyball and handball players. To achieve this purpose of the study, twenty basketball players, twenty volleyball players and twenty handball players who represented Inter College were selected as subjects. The age of subjects were ranged between 18 to 24 years. The following variables namely speed and agility was selected as criterion variables. All subjects of three groups were tested on agility by using shuttlerun. The one way analysis of variance was used to find out the significant difference among college men basketball, volleyball and handball players. The Scheffe's test was used as a post hoc test to find out the paired mean differences, if any. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

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Analysis of the
dataTable I

The mean, standard deviation and 'f' ratio values on agility among college volleyball basketball and handball players

Groups	Mean	Standard Deviation	Obtained 'F' Ratio
Volleyball players	7.69	0.84	3.79*
Handball players	6.82	0.92	
Basketball players	7.21	0.90	

* Significant at .05 level of confidence.

(The table value required for significance with df 2 and 57 was 3.138)

Table I shows that the mean values of college volleyball, handball and basketball players were 7.69, 6.82 and 7.21 respectively on agility. The obtained 'F' ratio 3.79 was greater than the table value 3.138 required for significance with df 2 and 57. The results of the study showed that there was a significant difference on agility among college volleyball, basketball and handball players.

Table II

The scheffe's test for the differences between paired means on agility

Volleyball players	Handball players	Basketball players	Mean Differences	Confidence Interval Value
7.69	6.82	-	0.87*	0.41
7.69	-	7.21	0.48*	0.41
-	6.82	7.21	0.39	0.41

* Significant at .05 level of confidence.

The table II shows that the mean difference values between college volleyball players and handball players and volleyball players and basketball players on agility 0.87 and 0.48 which were greater than the confidence interval value 0.41. And also the mean difference value between college basketball players and handball players on agility 0.39 which was less than the confidence interval value 0.41.The results of the study showed that there was a significant difference between college volleyball players and handball players and volleyball players and basketball players on agility. There was no significant difference between college basketball players and handball players on agility.

CONCLUSIONS

There was a significant difference on agility among college volleyball, basketballand handball players.

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ANALYSIS OF SPEED AMONG COLLEGE MEN BASKETBALL VOLLEYBALL AND HANDBALL PLAYERS

***Dr. S. SOBERS**,
Director of Physical Education, Chennai, Tamilnadu.
****Dr. A. JEYAGANESAN**,
Director of Physical Education, Guru Nanak College, Chennai, Tamilnadu.

ABSTRACT

The purpose of this study was to compare the speed among college men basketball, volleyball and handball players. To achieve this purpose of the study, twenty basketball players, twenty volleyball players and twenty handball players who represented Inter College were selected as subjects. The age of subjects were ranged between 18 to 24 years. The following variable speed was selected as criterion variable. The data were collected for all subjects on speed by using 50 mts dash. The one way analysis of variance was used to find out the significant difference among college men basketball, volleyball and handball players. The Scheffe's test was used as a post hoc test to find out the paired mean differences, if any. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. The results of the study showed that there was a significant difference among college men basketball, volleyball and handball players on selected variable namely speed.

Keywords: speed, basketball, volleyball, handball

INTRODUCTION

A sport is recreation as well as competition. Basically, sports are individual activities relating and revitalizing in nature and meant to provide opportunities to the individual to make the fullest and the most intelligent use leisure time.

METHODOLOGY

The purpose of the study was to compare the speed among college men basketball, volleyball and handball players. To achieve this purpose of the study, twenty basketball players, twenty volleyball players and twenty handball players who represented Inter College were selected as subjects. The age of subjects were ranged between 18 to 24 years. The following variable speed was selected as criterion variable. All subjects of three groups were tested on speed by using 50 mts dash. The one way analysis of variance was used to find out the significant difference among college men basketball, volleyball and handball players. The Scheffe's test was used as a post hoc test to find out the paired mean differences, if any. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

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Analysis of the data

Table I

The mean, standard deviation and 'f' ratio values on speed among college volleyball basketball and handball players

Groups	Mean	Standard Deviation	Obtained 'F' Ratio
Volleyball players	8.12	0.86	3.89*
Basketball players	7.15	0.95	
Handball players	7.21	0.95	

* Significant at .05 level of confidence.

(The table value required for significance with df 2 and 57 was 3.138)

Table I shows that the mean values of college volleyball, basketball and handball players were 8.12, 7.15 and 7.21respectively on speed. The obtained 'F' ratio 3.89 was greater than the table value 3.138 required for significance with df 2 and 57. The results of the study showed that there was a significant difference on speed among college volleyball, basketball and handball players. Since, three groups were compared, whenever the obtained 'F' ratio for adjusted posttest was found to be significant, the Scheffe's test to find out the paired mean differences and it was presented in Table II.

Table II

The scheffe's test for the differences between paired means on speed

Volleyball players	Basketball players	Handball players	Mean Differences	Confidence Interval Value
8.12	7.15	-	0.97*	0.40
8.12	-	7.21	0.91*	0.40
-	7.15	7.21	0.09	0.40

* Significant at .05 level of confidence.

The table II shows that the mean difference values between college volleyball players and basketball players and volleyball players and handball players on speed 0.01 and 0.97 which were greater than the confidence interval value 0.40. And also the mean difference value between college basketball players and handball players on speed 0.91 which was less than the confidence interval value 0.40. The results of the study showed that there was a significant difference between college volleyball players and basketball players and volleyball players and handball players on speed. There was no significant difference between college basketball players and handball players on speed.

CONCLUSIONS

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There was a significant difference on speed among college volleyball, basketball and handball players.

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ANALYSIS OF SPEED AMONG COLLEGE MEN BASKETBALLVOLLEYBALL AND HANDBALL PLAYERS

***Dr. S. SOBERS**,
Director of Physical Education, Chennai, Tamilnadu.
****Dr. A.JEYAGANESAN**,
Director of Physical Education, Guru Nanak College, Chennai, Tamilnadu.

ABSTRACT

The purpose of this study was to compare the speed among college men basketball, volleyball and handball players. To achieve this purpose of the study, twenty basketball players, twenty volleyball players and twenty handball players who represented Inter College were selected as subjects. The age of subjects were ranged between 18 to 24 years. The following variable speed was selected as criterion variable.The data were collected for all subjects on speed by using 50 mts dash. The one way analysis of variance was used to find out the significant difference among college men basketball, volleyball and handball players. The Scheffe's test was used as a post hoc test to find out the paired mean differences, if any. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. The results ofthe study showed that there was a significant difference among college men basketball, volleyball and handball players on selected variable namely speed.

Keywords: speed, basketball, volleyball, handball

INTRODUCTION

A sport is recreation as well as competition. Basically, sports are individual activities relating and revitalizing in nature and meant to provide opportunities to the individual to make the fullest and the most intelligent use leisure time.

METHODOLOGY

The purpose of the study was to compare the speed among college men basketball, volleyball and handball players. To achieve this purpose of the study, twenty basketball players, twenty volleyball players and twenty handball players who represented Inter College were selected as subjects. The age of subjects were ranged between 18 to 24 years. The following variable speed was selected as criterion variable.All subjects of three groups were tested on speed by using 50 mts dash. The one way analysis of variance was used to find out the significant difference among college men basketball, volleyball and handball players. The Scheffe's test was used as a post hoc test to find out the paired mean differences, if any. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

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Analysis of the dataTable I

The mean, standard deviation and 'f' ratio values on speed among college volleyball basketball and handball players

Groups	Mean	Standard Deviation	Obtained 'F' Ratio
Volleyball players	8.12	0.86	3.89*
Basketball players	7.15	0.95	
Handball players	7.21	0.95	

* Significant at .05 level of confidence.

(The table value required for significance with df 2 and 57 was 3.138)

Table I shows that the mean values of college volleyball, basketball and handball players were 8.12, 7.15 and 7.21respectively on speed. The obtained 'F' ratio 3.89 was greater than the table value 3.138 required for significance with df 2 and 57. The results of the study showed that there was a significant difference on speed among college volleyball, basketball and handball players. Since, three groups were compared, whenever the obtained 'F' ratio for adjusted posttest was found to be significant, the Scheffe's test to find out the paired mean differences and it was presented in Table II.

Table II

The scheffe's test for the differences between paired means on speed

Volleyball players	Basketball players	Handball players	Mean Differences	Confidence Interval Value
8.12	7.15	-	0.97*	0.40
8.12	-	7.21	0.91*	0.40
-	7.15	7.21	0.09	0.40

* Significant at .05 level of confidence.

The table II shows that the mean difference values between college volleyball playersand basketball players and volleyball players and handball players on speed 0.01 and 0.97 which were greater than the confidence interval value 0.40. And also the mean difference value between college basketball players and handball players on speed 0.91 which wasless than the confidence interval value 0.40. The results of the study showed that there was a significant difference between college volleyball players and basketball players and volleyball players and handball players on speed. There was no significant difference between college basketball players and handball players on speed.

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CONCLUSIONS

There was a significant difference on speed among college volleyball, basketballand handball players.

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EFFECTS OF ANAEROBIC, SKILL RELATED AND COMBINEDTRAINING ON SPEED BETWEEN INTER COLLEGIATE WOMEN BASKETBALL PLAYERS

Mr. P.MARUTHACHALAMOORTHY,
Director of Physical Education, Mohamed Sathak Polytechnic College, Kilakarai, Tamilnadu.

ABSTRACT

The present study on effects of anaerobic skill related and combined training on speed among inter collegiate women basketball. To achieve the purpose of study sixty inter collegiate basketball players were selected from university of Madras affiliated college, colleges which have performance during inter collegiate tournament. The age group of the subject ranged between 17 to 25. The Subject were divided into three groups namely experimental group I, experimental group II, and experimental group III. Each group consists of 20 subjects, the training period of this study was six weeks. The experimental group I underwent anaerobic training, experimental group II underwent skillrelated training, and experimental group III underwent combined training. pre and post test were taken from the subject before and after six weeks of training program .To analyze the data ANCOVA and scheffes post hoc . The result of study showed that therewere a significant improvement in speed among inter collegiate women basketball players due to training outcomes of anaerobic , skill related training and combined trainingand also combined training have better important than anaerobic and skill related training.

Keyword: *Anaerobic, skill related training and basketball.*

TRAINING

The action of teaching a person a particular skill or type of behaviour. Organized activity aimed at imparting information and instruction to improve the recipient's performance to help the athlete attain a required level of knowledge or skill. Training has specific goals of improving capability, capacity, productivity and performance.

ANAEROBIC TRAINING

Anaerobic exercise does not burn so many calories as aerobic exercise. It is alsoless important in cardiovascular fitness. But, it is much better at building overall strength and muscle mass. Anaerobic exercise will also increase the maximum amount of oxygen you use during exercise, improving athlete cardio and respiratory fitness. Anaerobic exercise will also increase sports person endurance and the ability to stand fatigue. Because building muscles takes a lot of energy, anaerobic exercises can also help with weight loss. Increased lean muscle mass boosts metabolism, again helping with the weight loss and the decrease in body fat.

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SKILL RELATED TRAINING

Skill related training focused on the performance of technical and tactical activities which are involved in sports specific movements. During training and competition.

Speed:

It refers to the time needed to perform an activity. This can be overall speed of a player when sprinting or hand speed when a player is trying to steal a ball.

Statement of the Problem

The purpose of the study was to find out the outcomes of the anaerobic training, skill related training and combined training on speed among inter collegiate women basketball players.

METHODOLOGY AND EXPERIMENTAL DESIGN

To achieve the purpose of study sixty basketball players were randomly selectedfrom the affiliated colleges of University of Madras, colleges which have performed betterduring the inter collegiate women basketball tournament. The age group of subject, between 17 to 25 and were divided into three groups namely anaerobic training group basketball skill related training group and combined training group were considered as experimental groups for this study.

Selection of Variables:

Independent variables:

1. Anaerobic training
2. Skill related training
3. Combined training (Anaerobic and skill related training).

Dependent variables:

1. Speed (measured by 50m dash).

Experimental Design

The study was formulated as a random group design consisting of three group, preand post test were tested. The subjects (n-=60) were randomly assigned three groups, the groups were assigned as experimental group. Group I, group II and group III. The Pre test was conducted for all subjects on speed, the experimental group participated in these respective anaerobic skill related training and combined training for the period of six weeks .The post test was conducted on speed after a period of six weeks.

Statistical Techniques

The data collected from the subject were studied statistical analyses of co-varianceto find out the adjusted means different among the treatment groups. The scheffes post hoc test was used to find out the mean differences.

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Result of the study

The subject's were selected at random but the groups were not equated in relationto the factors to have been examined. Hence the difference among the means of the threegroups in pre test differenced among the means. This was achieved by the application of analysis of co variance where in the final means were adjusted for differences in the initial means and the adjusted means were tested by Scheffe's post – hoc method.

Table I

Computation of analyses of co variance of pre, post and adjusted post test of anaerobic training, skill related training and combined training groups on speed

Test	Anaerobic training Group	Skill related training Group	Combined training Group	SOV	Sum of squares	Df	MS	F
Pre Test	8.616	8.612	8.205	B	2.22	2	1.113	**3.53***
				W	17.96	57	0.315	
Post Test	7.592	8.092	6.697	B	19.97	2	9.988	**46.46***
				W	12.25	57	0.214	
Adjusted Post Test Mean	7.530	8.032	6.819	B	13.50	2	6.753	**43.67***
				W	8.66	56	0.154	

* Significant at 0.05 level. Table value required for significant at 0.05 level of confidencefor (df) 2 and 57 is 3.16

Taking into consideration the pre and post test scores among the groups, adjustedmean scores were calculated and subjected to statistical treatment. The obtained F value3.53, 46.46 and 43.67 was greater than the required F value of 3.16. This proved that there was significant differences among the means due to six weeks training on the physical fitness variable, speed. Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test.

Table – II

Scheffe's post hoc test for the differences between the adjusted post test mean of speed (in seconds)

Anaerobic training Group	Skill related training Group	Combined training Group	Mean Deviation	Confidential Interval
7.53	8.03	-	**0.50**	0.32
7.53	-	6.82	**0.71**	
-	8.03	6.82	**1.21**	

The multiple mean comparisons shown in Table II proves that there was significant

difference between Anaerobic training group and Skill related training group, Anaerobic training Group and Combined training Group. There was a significant difference between the adjusted means of Skill related training Group and Combined training Group.

Discussion of Hypothesis

It was stated that there might be significant improvement on speed among inter collegiate women basketball players. Due to the influence of anaerobic, skill related and combined training. The result of the present study shows that there was significant difference among the anaerobic, skill related and combined training on Speed. Hence the hypothesis was accepted

CONCLUSION

From the analysis of data, the following conclusions are drawn

1. All the three groups had achieved significant improvement on physical variables by the given six week training.
2. Combined training group had achieved more significant than the Anaerobic training group.
3. Combined training group had achieved more significant than the Skill Related training group.

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EFFECT OF SINGLE LEG DOUBLE LEG PLYOMETRIC TRAINING WITH YOGASANA PRACTICE ON SELECTED NEURO - MUSCULAR VARIABLES OF ENGINEERING COLLEGE FOOTBALL PLAYERS

*** Mr. G. INZAMAM UL HAQ**
Ph.D. Research Scholar, Dept. of Physical Education, Annamalai University,
Chidambaram – 608 002, Tamilnadu, India

**** Dr. S. SELVAKUMAR**
Co – Supervisor
Director & Head, Dept. of Physical Education, BS Abdur Rahman Crescent Institute of Science and Technology, [Deemed to be University]
Chennai – 600 048, Tamilnadu, India.

INTRODUCTION

In the realm of sports science and performance enhancement, understanding the influence of specific training regimens on athletic abilities is of paramount importance. Football, being a sport demanding a unique blend of strength, speed, and agility, places a premium on the physical attributes of its players. Flexibility and agility, in particular, playa vital role in determining a player's success on the field, affecting their ability tomaneuver, respond, and excel in a highly dynamic and competitive environment. This study endeavors to shed light on the transformative potential of a combined approach, encompassing both plyometric training and Yoga

sana practice. Plyometrics, characterized by explosive and powerful movements, have been acknowledged for their capacity to enhance muscle strength and enhance agility. In tandem, Yogasana, a millennia-old discipline, is renowned for its contributions to flexibility, balance, and mental focus. The context of engineering college football players adds a distinctive dimension to the study, as it delves into the unique challenges and opportunities presented by this specific group of athletes. The findings of thisresearch hold promise not only for the individuals involved but also for a broaderunderstanding of training methodologies in the realm of sports science. By embarking onthis scientific inquiry, the journal seeks to unravel the potential synergy between two distinct training paradigms, offering new perspectives on the optimization of football players' flexibility and agility. The significance of this research extends beyond the field,

potentially influencing training protocols and strategies for aspiring athletes and sports enthusiasts.

Football players who possess greater explosiveness have the capacity to outperform others, as their ability to sprint at higher speeds and leap to greater heights affords them a competitive edge. This advantage becomes evident when they need to leap to secure a ball, rapidly advance down the field, or pursue opposing defenders. Plyometric exercises, designed to exert muscles explosively, play a pivotal role inenhancing these attributes. Through consistent plyometric training, football players can notably boost their speed, strength, and agility. It's important to note that plyometric exercises can be categorized as either single leg (involving a single leg) or double leg (involving both legs). (Bogdanis GC, et.al., 2017).

Enhanced flexibility can help reduce the risk of injuries, especially muscle strains and tears. football players engage in dynamic movements, sudden changes in direction, and quick accelerations, which can put significant stress on the muscles and joints. Greater flexibility allows football players to have an extended range of motion in their joints. This increased range of motion can be advantageous for executing movements such as high kicks, tackles, and diving saves, all of which are essential in the game. Flexible muscles can generate more force and power. This means that players with improved flexibility can produce stronger and more explosive movements. Flexible muscles can recover more effectively after intense workouts and matches. They are lesslikely to become stiff or cramp, reducing post-game soreness and aiding in quicker recovery between games and training sessions.

Football is a dynamic sport with frequent changes in direction, rapid accelerations, and sudden stops. Agile players can navigate through the field more effectively, swiftly adapting to the ever-changing flow of the game. This agility allows them to respond to opponents, create scoring opportunities, and avoid challenges more successfully. For defenders, agility is essential in marking opponents and intercepting passes. Agiledefenders can close down opponents, tackle, and change direction swiftly, making it harder for attackers to get past them. For attackers and midfielders, agility is a key component of effective dribbling. It enables players to evade defenders, change directionquickly, and maintain possession of the ball. Agility contributes to improved balance and stability. Football often involves challenging situations where maintaining balance can bethe difference between success and failure, whether it's making a shot on goal or executing a tackle.

Hypotheses

1. The hypothesis put forth was that a substantial disparity in flexibility would beobserved between the control group and the experimental group of male football players in an engineering college. This discrepancy was expected to result from the combined effects of single leg and double leg plyometric training alongside yogasanapractices.
2. Similarly, it was postulated that a noteworthy contrast in agility would emerge when comparing the control group with the experimental group of male football players in an engineering college. This anticipated divergence was attributed to the integrated impact of single leg and double leg plyometric training in conjunction with yogasana practices.

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Delimitations

1. A total of forty male football players competing at the intercollegiate level were carefully chosen from multiple engineering colleges in Chennai.
2. The participants' age range fell between 18 and 22 years.
3. As the dependent variables of interest, neuromuscular factors, specifically flexibility and agility, were selected for examination.
4. The training regimen extended over a six-week period.
5. The experimental training program encompassed a selection of single leg anddouble leg plyometric exercises, complemented by the practice of specific asanas.

Limitations

1. Factors such as daily schedules, dietary patterns, lifestyle choices, and rest intervals were not factored into the analysis.
2. The study did not account for the hereditary and environmental factors that may impact neuromuscular variables.
3. The research did not endeavor to assess whether the subjects maintained consistent levels of motivation across different phases of training and testing.

METHODOLOGY

To accomplish the study's objectives, 40 male football players hailing from diverse engineering colleges in Chennai, Tamil Nadu, were carefully selected. These participants were evenly distributed into two groups: the control group and the experimental group. The control group did not undergo any form of physical training. In contrast, the experimental group was subjected to a comprehensive training program comprising both single leg (single leg) and double leg (double leg) plyometric training, integrated with yogasana practices, spanning a six-week period. The experimental training sessions were structured to last between 60 to 70 minutes in the morning, commencing with a warm-up routine and concluding with a proper cooldown. On Mondays, the experimental group exclusively engaged in single leg plyometric training, while Thursdays were dedicated to double leg plyometric training. In addition, the experimental group dedicated their time to yogasana practice on Tuesdays and Wednesdays.

TRAINING SCHEDULE

Table I

	Exercise	**1-3 weeks**		**4-6 weeks**	
Single leg (Single leg	Single leg jump on the spot	15 repetition	3 sets	15 repetition	5 sets
	Reverse jump	15 meters	3 sets	15meters	5 sets
	Depth jump	1meter height/15	3 sets	1meter height/15	5 sets

Plyometrics)		repetition		repetition	
	Hurdle hop	6 repetition 4 hurdles	3 sets	6 repetition 4 hurdles	5 sets
	Box jump	20 inch height, 10 reptition	3 sets	20 inch height, 10 reptition	5 sets
Double leg (Double leg Plyometrics)	Lateral box jump	15 repetition	3 sets	15 repetition	5 sets
	Broad jump	15 meters	3 sets	15 meters	5 sets
	Skater Jump	10 repetition	3 sets	10 repetition	5 sets
	Scissor jump	10 repetition	3 sets	10 repetition	5 sets
	Lateral box shuffles	10 repetition	3 sets	10 repetition	5 sets
Asana	Adho mukha svanasana	20-30	10	40-60	10
	Ardha matsyendrasana	20-30	10	40-60	10
	Gomukhasana	20-30	10	40-60	10
	Utthan pristhasana	20-30	10	40-60	10
	Vrksasana	20-30	10	40-60	10

Data for the pretest and post-test assessments were gathered from both the control group and the experimental group prior to and following the six-week experimentaltraining period. The evaluations encompassed the assessment of flexibility using the sit and reach test and agility via the employment of the Semo Agility Test (David Tomchuk, 2011). Subsequently, the accumulated data was subjected to analysis through theapplication of ANCOVA, with the significance level firmly set at 0.05.

Results and discussion

Table II showing the analysis of covariance on flexibility,

Table II

Analysis of covariance on flexibility of control and experimental group

Source	Sum of Squares	df	Mean Square	F	Sig.
Between	15.695	1	15.695	118.859*	.000
Within	4.884	37	.131		
Total	71.456	39			

*Significant at 0.05 level

The recorded F-ratio value for flexibility, comparing the control group and the experimental group, stood at 118.859, surpassing the critical table value of 4.08. This outcome

led to the rejection of the null hypothesis, underscoring a substantial discrepancy in flexibility between the adjusted post-test means of these two groups. Consequently, the initial hypothesis was corroborated.

Figure 1, which presents a bar diagram illustrating the pretest and posttest mean values of the control and experimental groups concerning flexibility.

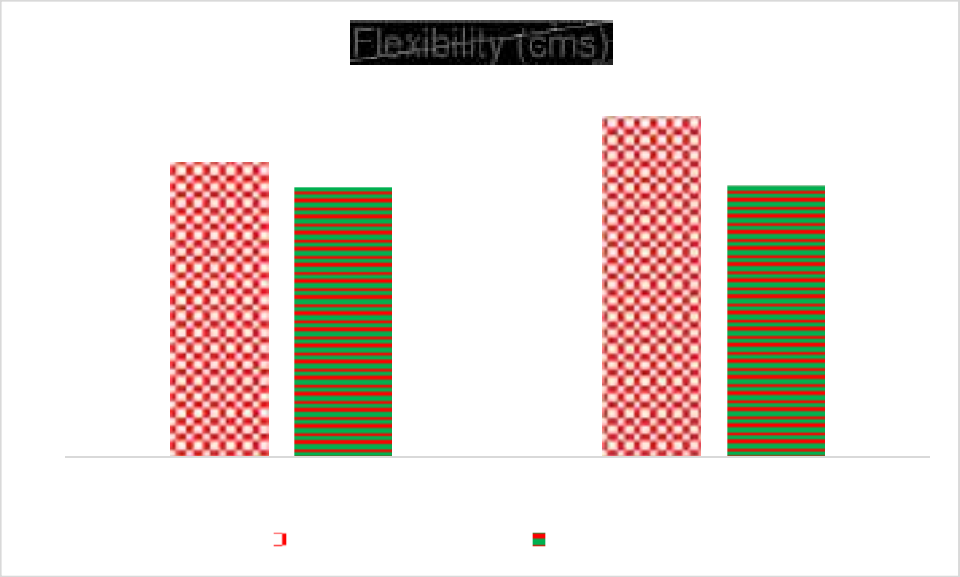

Table III

Analysis of covariance on agility of control and experimental group

Source	Sum of Squares	df	Mean Square	F	Sig.
Between	22.606	1	22.606	881.367*	.000
Within	.947	37	.024		
Total	28.100	39			

*Significant at 0.05 level

The calculated F-ratio value for agility, when comparing the control group and the experimental group, amounted to 881.367, clearly exceeding the critical table value of

4.08 at a significance level of 0.05 with 1,37 degrees of freedom. As a result, the null hypothesis was invalidated, signifying a substantial variation in agility between the adjusted post-test means of the control and experimental groups. Consequently, the initial hypothesis was validated.

Figure 2, as shown below, presents a bar diagram illustrating the pretest and posttest mean values of the control and experimental groups concerning agility.

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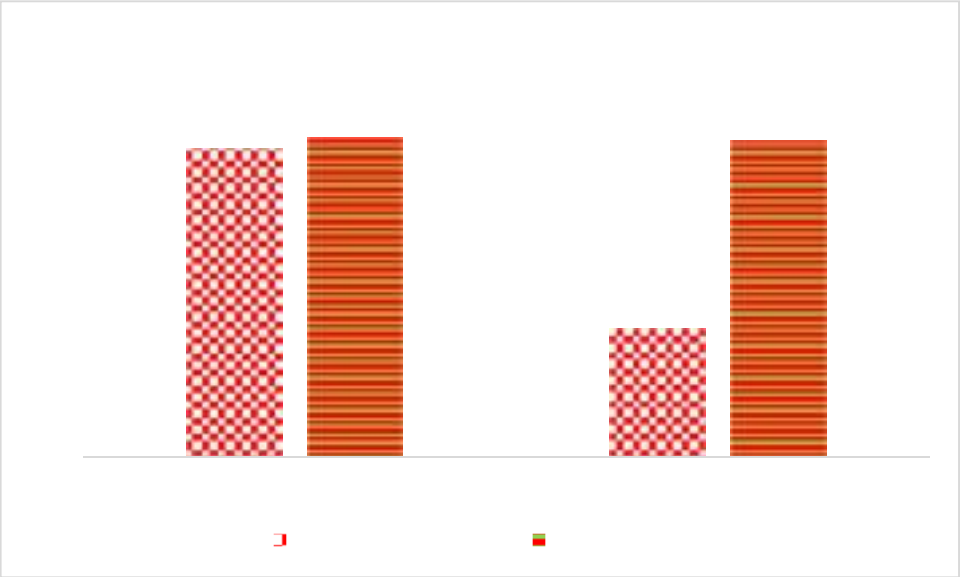

This figure illustrates that Single leg and double leg plyometric training with yogic practices showed significant improvement in flexibility and agility among football players.**Discussion**

Plyometric training enhances the connection between maximal power and explosive force. High-level power and strength training contribute to the enhancement of both intramuscular and intermuscular coordination, thereby promoting gains in strength and muscle hypertrophy (Ari Y, 2017).

A marked improvement in flexibility values was observed when comparing the data before and after the training for the experimental group ($p<0.01$). Following the program, a noteworthy increase in sit-and-reach test scores was evident concerning the flexibility values of the control group ($p<0.05$).

Agility represents a crucial attribute for a football player, enhancing their performance during training sessions and matches alike. The game's demands, which frequently involve rapid decision-making, swiftness, and reflexes, underscore the importance of developing a football player's agility (Patel, 2022).

An appreciable reduction in semo agility test scores was noted when comparing the data before and after the training for the experimental group ($p<0.05$).

CONCLUSION

1. It was concluded that six weeks of single leg, double leg plyometric training with combined yogasana practices significantly improved flexibility of male football players of various engineering college in Chennai, Tamil Nadu.
2. It was concluded that six weeks of single leg, double leg plyometric training with combined yogasana practices significantly improved agility of male football players of various engineering college in Chennai, Tamil Nadu.

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THE EFFECT OF PROPRIOCEPTIVE TRAINING, YOGA ASANA PROGRAM AND COMBINED TRAINING ON DYNAMIC BALANCE AMONG FOOTBALL PLAYERS

DR. R.RAJESH WILLIAM.[1] & DR. S.GLADY KIRUBAKAR[2]

[1] Director - Physical Education, Manipal Academy of Higher Education, Bengaluru, Karnataka.

[2]Associate Professor, YMCA College of Physical Education, Chennai – 35, India.

ABSTRACT

The purpose of the study was to find out the influence of proprioceptive training, yoga training and combined training programme on physical variable dynamic balance among school level football players. To achieve the purpose of the study sixty (N=60) male football players were randomly selected. The age group of the subject was 14 to 17 years. Selected subjects were equally divided into two groups namely control and experimental group. Control group was not given any type of training. Experimental group was given proprioceptive training, yoga training and combined proprioceptive and yoga training for a period of ten weeks. The pre-test and post-test data on dynamic balance was collected on both the groups before and after the experimental training. collected data was analysed by using ANCOVA to find significant difference among mean at 0.05 level of confidence. It was concluded that experimental group combined proprioceptive and yoga training group significantly ($p \leq 0.05$) improved the dynamic balance when compared to control group of the school level football players.

Keywords: proprioceptive training, yoga training, combined training and football players.

INTRODUCTION

Football, commonly known as soccer in many parts of the world, has a long and fascinating history in India. It was introduced to India during the British colonial period in the mid-19th century. The game initially gained popularity among the British soldiers stationed in India, and from there, it spread to the local population. Football was first introduced to India by British soldiers and colonial administrators in the mid-19th century. It started as a recreational activity and was played primarily by the British expatriates.

Proprioceptive training and yoga are two important components of the physical and mental development of school-level football players. Proprioception refers to the body's ability to sense its position and movements. Proprioceptive training focuses on improving balance, coordination, and spatial awareness, all of which are essential for football players. School-level players can benefit from proprioceptive exercises, as they help prevent injuries by enhancing stability and

reducing the risk of sprains and strains. Proprioceptive drills can also improve agility and reaction time, which are crucial skills for football players to navigate the field effectively. Proprioception is indeed a crucial component of the neuromuscular system, and its training plays a vital role in improving balance, coordination, and movement precision. Afferent pathways are sensory nerve pathways that carry information from various receptors in the body (such as muscle spindles, joint receptors, and skin receptors) to the central nervous system (CNS), including the brain and spinal cord. These pathways provide information about the body's position, movement, and orientation. Proprioceptive exercise programs aim to enhance an individual's ability to perform complex movements accurately and efficiently. These movements may include athletic skills like running, jumping, cutting, or precise ball- handling in sports like football. Proprioception operates largely at an unconscious level. It allows individuals to perform movements without the need for conscious thought or detailed attention to each step. This is critical in fast-paced sports where quick reactions are essential. The CNS, specifically the brain and spinal cord, plays a pivotal role in receiving and interpreting proprioceptive information. This information allows the CNS to make rapid adjustments to muscle contractions and joint movements, aiding in maintaining balance and coordination. Proprioception is particularly relevant in athletic activities where rapid changes in direction, balance, and spatial awareness are required. It helps athletes maintain stability and make split-second decisions during play. Proprioceptive training is often used in injury prevention programs because it helps individuals respond effectively to unexpected movements or perturbations, reducing the risk of injuries such as sprains and strains. Proprioception is an integral part of the overall neuromuscular system. It complements other aspects of physical fitness like strength, endurance, and flexibility to create well-rounded athletes.

Yoga provides a holistic approach to physical fitness and mental well-being. For school-level football players. Yoga helps improve flexibility, which can aid in preventing muscle injuries and enhancing mobility on the field. Yoga poses and flows can build strength, particularly in the core and lower body, which are important for stability and power in football. Yoga promotes mental clarity, concentration, and stress management, all of which are valuable for maintaining composure during matches and making sound decisions on the field. Yoga can aid in post-match or post-training recovery by reducing muscle soreness and promoting relaxation.

Yoga into sports training, particularly in the context of improving physical performance, flexibility, balance, and mental focus. It highlights the transition from static balance to dynamic balance, which is crucial for athletes in various sports. Yoga is increasingly being integrated into sports teams' training regimens as a complementary exercise. Athletes in various sports, such as football, basketball, and even extreme sports, use yoga to enhance their overall performance. Yoga has a profound impact on physical attributes such as flexibility and balance. Regular practice can lead to increased flexibility and improved body awareness, which are valuable assets for athletes. Yoga is also known for promoting positive mental changes. It can help athletes develop mental focus, concentration, and the ability to stay present, which are essential for peak performance. While yoga often focuses on static balance, in daily life and sports, individuals are constantly in motion, requiring dynamic balance. Dynamic balance involves

managing and adjusting to shifts in balance while on the move. Transitioning between yoga poses is a key aspect that can help individuals work on dynamic balance. These transitions simulate the constant shifts in balance experienced in sports and daily activities.

Combining proprioceptive training and yoga into the training regimen of school- level football players can help them develop into well-rounded athletes with improved physical and mental attributes. These training methods contribute not only to injury prevention but also to the overall performance and longevity of young footballers.

OBJECTIVES:

The main objective of the study is to find out the efficacy of a specific proprioceptive training, yoga training and combined proprioceptive and yoga training on selected neuromuscular variables dynamic balance among football players.

METHOD:

The study selected a total of 60 football players. These participants were evenly divided into four groups: Experimental Group I (PTG): Proprioceptive Training Group (n = 15), Experimental Group II (YTG): Yoga Training Group (n = 15), Experimental Group III (PYTG): Combined Proprioceptive and Yoga Training Group (n = 15), Control Group (CG): No specialized training (n = 15).The control group, in this case, was not involved in any specific training program related to proprioception or yoga. They solely engaged in regular football game practice. The experimental groups underwent different training programs: Warm-up: A 10-minute warm-up session, Workout: A 40-minute training session, which likely included either proprioceptive exercises, yoga exercises, or a combination of both, depending on the group. Cool-down: A 10-minute cool-down session, Training Frequency: The training sessions occurred three days a week in the morning. Duration: The training program lasted for ten weeks, focusing on the muscles of the lower extremities. To evaluate the effectiveness of the training programs, the study used analysis of covariance (ANCOVA) to compare the initial and final mean values between the experimental groups and the control group. The significance level was set at 0.05, indicating that any p-value less than or equal to 0.05 was considered statistically significant at a 95% confidence interval. The study's design appears to assess how different training modalities (proprioceptive training, yoga training, and a combination of both) impact the dynamic balance performance of football players, particularly in terms of lower extremity muscle involvement. By using a control group and statistical analysis, the study aims to determine if any observed improvements are statistically significant.

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Training Schedule

Table I

Experimental Training Group	Name of the Exercise	Week	1-3	4-6	7-10
		Sets	2	2	2
Proprioceptive Training (PTG)	1. Single leg stance while swinging the raised leg (flexed knee) 2. Forward & Backward leg swing with knee extended on single leg stance. 3. Cross leg swings 4. Single foot side to side ankle hop 5. Side to Side ankle hop 6. Runners Pose 7. Partial Squats 8. High Bench Step ups 9. Split squat jump 10. Double leg Stance on wobble board (Eyes open)	Reps.	12	15	18
		Sets	**4**	**4**	**2**
YogaTraining (YTG)	1. Vrikshasana 2. Vajrasana 3. Tadasana 4. Paschimouthanasana 5. Halasana 6. Bhujangasana 7. Dhanurasana 8. Naukasana 9. Sarwangasana 10. Bhunaman Vajrasana	Pose duration	30	60	90
Combined Proprioceptive &Yoga Training (PYCG)	(Monday, Wednesday & Friday) in a week for first five (05) weeks for proprioceptive training along with Group-I (PTG). (Tuesday, Thursday & Saturday) in a week for next five (05) weeks for yoga training along with Group-II (YTG).				

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The use of pre-test and post-test data collection, along with an authenticated test like the Modified Bass Test, is a common practice in scientific research to assess the effectiveness of an intervention or training program. The test used to assess dynamic balance is called the "Modified Bass Test." It appears to be an established and validated method for evaluating dynamic balance **(Johnson & Leach. 1968)**

ANALYSIS

Table II showing the analysis of covariance on dynamic balance,

Table II

Analysis of covariance on dynamic balance of control and experimental group

Group		PTG	YTG	PYTG	CG	So V	SS	Df	MS	F ratio
Pre Test	Mean	86.13	85.73	85.27	85.40	BG	6.733	3	2.244	0.146
	SD	4.23	3.74	4.10	4.87	WG	861.20	76	15.379	
Post Test	Mean	91.53	90.87	97.20	83.87	BG	1343.33	3	447.78	34.00*
	SD	4.72	2.48	4.99	3.44	WG	737.60	76	13.17	
Adjusted Post Test Mean		91.18	90.80	97.46	84.03	BG	1354.02	3	451.340	79.20*
						WG	313.43	75	5.70	
Mean Gains		5.40	5.14	11.93	1.53					

*Significant at 0.05 level 3 and 76 (df) =2.73, 3 and 75 (df) =2.73

The attained F-ratio for the adjusted post-test means was 79.20, which was compared to a table F-ratio value of 2.73. The passage indicates that the attained F-ratio (79.20) was significantly greater than the table F-ratio value (2.73). This suggested that there was a statistically significant difference among the means in the post-test data. The significance level used for this analysis was 0.05 (5%). When the p-value (or significance level) is less than 0.05, it is typically considered statistically significant. In this case, the significant difference was found at the 0.05 level of confidence. The analysis involved degrees of freedom of 3 and 75. Degrees of freedom are parameters used in statistical tests to determine the distribution of the test statistic. In this case, it appears to refer to the degrees of freedom associated with the F-test. The present study concluded that the significant F-ratio indicates there was a significant difference among the means due to the experimental training on dynamic balance. In other words, the

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training had a measurable and significant impact on dynamic balance. After finding significant differences among the means, the data was subjected to Scheffe's post hoc test for further analysis. Post hoc tests are used to determine which specific groups or conditions significantly differ from each other after finding an overall significant difference. To explore the specific differences among the means in more detail, Scheffe's post hoc test was conducted as a follow-up analysis. The results are given in the Table III.

Table III

The Scheffe's Test for the Differences Between the Adjusted Post-Test Means on Dynamic balance.

Adjusted Post-test Means				Mean Difference	Required CI
Proprioceptive Training	YogaTraining	Combined Training	Control Group		
91.18	90.80	---	---	0.38	1.46*
91.18	---	97.46	---	6.28*	
91.18	---	---	84.03	7.15*	
---	90.80	97.46	---	6.66*	
---	90.80	---	84.03	6.77*	
---	---	97.46	84.03	13.43*	

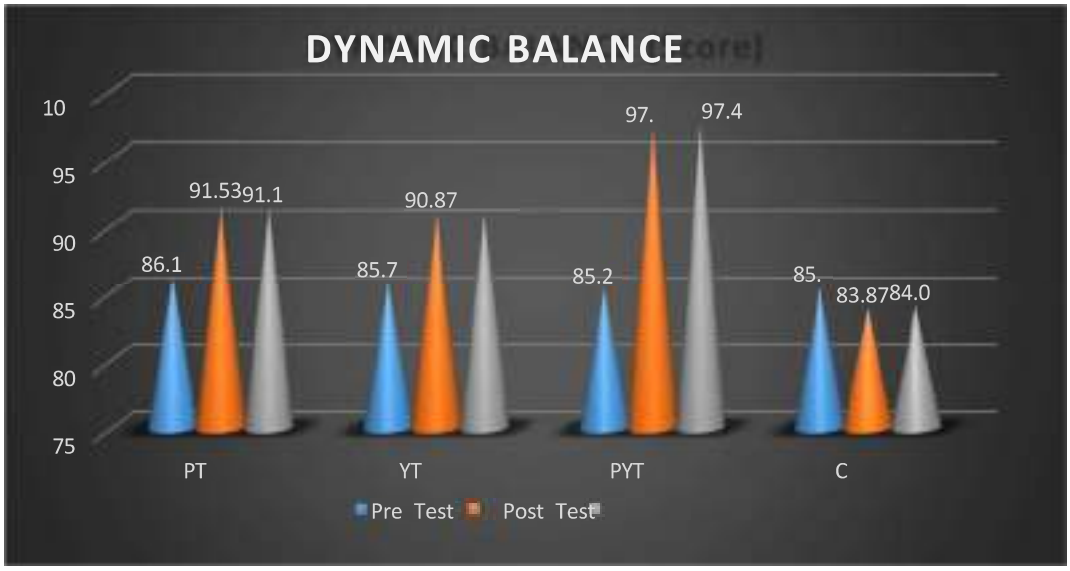

Table III evidenced that significant differences occurred between the adjusted means of PTG and PYTG (6.28), PTG and CG (7.15), YTG and PYTG (6.66), YTG and CG (6.77), PYTG and CG (13.43). There was no significant difference between PTG and YTG (0.38) at 0.05 level of confidence with the confidence interval value of 1.46 which indicates that there were significant differences among proprioceptive training and control group, yoga training and

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control group, combined training and control group on dynamic balance.

Fig1. Showing mean values of pre-test and post-test of control and experimental groups of dynamic balance.

Discussion on findings:

The post hoc test analysis through Scheffe's Confidence test proved that due to proprioceptive training, yoga training, combined proprioceptive and yoga training groups improved dynamic balance than the control group and the differences were significant at 0.05 level. Further, the post hoc test analysis shows that there was significant differencebetween the experimental groups, clearly indicating that combined proprioceptive and yoga training group was better than the proprioceptive training and yoga training in improving the dynamic balance of the football players.

The result of the study showed that there was a significant improvement in dynamic balance due to 10 weeks of training programme. Further the study clearly revealing that the combination of training is better than the isolated training alone for improving dynamic balance of rural Football players.

The findings of Zacharakis, E. D., (2020) do support the findings of current study with respect to proprioceptive training effect on balancing of youth basketball players and found that 8-week proprioception training program improves adolescent basketball players' passing accuracy in both sexes, fast shooting, static balance and dynamic balance. The observation of this study is very similar to the findings of Sunil Rayat (2015). In his study effect of practice of yoga exercises on balance and perception of national level players, the researcher conclude that longer duration of yogic exercises will significantly improves the balance (static and dynamic balance) and perception. Therefore, combined proprioceptive and yoga training provides all of the benefits that each exercise type gives alone, but may supply greater overall health through a synergistic effect.

CONCLUSIONS:

From the results of the study and discussion the following conclusions were drawn.

1. There is a significant difference on dynamic balance between all the groups.
2. There is a significance improvement on dynamic balance due to combined proprioceptive and yoga training.

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EFFECTS OF PLYOMETRIC TRAINING AND COMBINED PLYOMETRIC AND STRENGTH TRAINING PROGRAMS ON STRENGTH PARAMETERS

*** Dr. D. RAMESH**
Director of Physical Education
Periyar Maniyammai Institute of Science and Technology [Deemed to be University]
Tanjavur, Tamilnadu – India

**** Mr. K. VENKATESAN**
PhD. Research Scholar, Dept. of Physical Education, Annamalai UniversityChidambaram – 608 002, Tamilnadu - India.

ABSTRACT

The study aimed to ascertain the effects of PT (Plyometric Training) and CPST (Combined Plyometric and Strength Training) programs on certain strength parameters. Forty-five male kabaddi players who were enrolled at St. Peter's University in Chennai, Tamil Nadu, for the academic year 2020–2021 served as the subjects to achieve the objective. The players maintained a consistent schedule of academic and extracurricular activities by the requirements of the curriculum, and all resided in the St. Peter's University boy's hostel. The age, height and weight of the subjects were ranged from 18 to 25 (mean age = 19 $\pm$ 7 months) years, 160 to 174 cms (mean height = 168 $\pm$ 0.25 cms) and 52 to 65 kg (mean strength = 58.5
+ 0.35 kg) respectively. They were split into three equal groups, each with fifteen participants; two of these groups were used for experiments, and the third acted as a control group. Group I (n = 15) plyometric training group [PTG] and Group II (n = 15) plyometric and strength training group [CPSTG] underwent respective training for twelve weeks, and Group III (n = 15) served as the study's control group which did not take part in any special training exceptfor their regular sports activities. The criterion factors used for the current study were leg and back strength. Data was collected from groups before and immediately after the training program. Analysis of covariance (ANCOVA) was performed to find any significant differences between the groups for each variable separately. The Scheffé S test was utilized as a post-hoc test when the 'F' ratio of the adjusted post-test means was proven to be significant at
0.05 levels of confidence. Based on the result of the study, it was concluded that PTG and CPSTG significantly boosted leg strength and back strength. According to the study's findings, there was a substantial difference between the training groups in CPSTG's favor.

Key Words: Plyometric Training, Strength Training, Strength Parameters

INTRODUCTION

Various training approaches enhance various physical and motor fitness aspects at multiple

levels. These fundamental training processes will be more effective if modified to fit the person or group's needs. The optimum training program improves desired quality faster while avoiding negative consequences. Physical training is one of the most significant components of high-performance training. Physical training maximizes an athlete's physiological potential and enhances biomotor talents to the best level possible.

Many instructors today employ the well-liked training method known as plyometrics. It has been effective in bridging the gap between raw strength and power. Any workout that enables players to benefit from the stretch-shortening cycle to create an explosive movement is calledplyometrics. Even though plyometric exercise has been around for a while, there is still disagreement over its efficacy and safety. This literature review aims to review all pertinent data on the subject to evaluate the effectiveness of plyometric exercise as a training method.

Strength training aims to overcome a particular obstacle, whether that resistance comes inthe shape of an apparatus, a sports object, or one's own body weight. However, to be successful, one must train with a specific sort of progressive resistance exercise tailored to the individual's demands and the activity in question. Resistance training contributes to the preservation of functional capacities, has substantial impacts on the musculoskeletal system, and helps to avoid sarcopenia, lower-back discomfort, osteoporosis, and other problems, according to research.

METHODOLOGY

Forty-five male kabaddi players who were enrolled at St. Peter's University in Chennai, Tamil Nadu, for the academic year 2020–2021 served as the subjects to achieve the objective andall resided in the St. Peter's University boy's hostel. The age, height and weight of the subjects were ranged from 18 to 25 (mean age = 19 $\pm$ 7 months) years, 160 to 174 cms (mean height = 168 $\pm$ 0.25 cms) and 52 to 65 kg (mean strength = 58.5 + 0.35 kg) respectively.

TRAINING PROGRAMME

The experimental groups received different training programs during the training period in addition to the regular kabaddi practice of their competition-compliant course of study. The length of the training sessions varied daily but lasted from 45 minutes to an hour. Group I had engaged in PT three days a week for twelve weeks, Group II had been involved in CSPT three days a week for twelve weeks, and Group III served as the control group and did not engage in any particular exercise comparable to that of the experimental groups. They did, however, complete the required coursework for their course of study. Under the strict supervision of the researcher, the experimental groups underwent their respective training regimens during the evening hours. The training was carried out on grassland to lessen the risk of injury. All participants in this research were closely observed throughout the training regimen to prevent injuries.

Experimental Design and Statistical Technique

Random sampling method was adopted for the selection of subjects. Randomized pre test post test control group design was adopted for this study. The criterion factors used for the current study were leg and back strength and Leg Dynamometer was used to assess the criterion factor. Data was collected from groups before and immediately after the training program. Analysis of covariance

(ANCOVA) was performed to find any significant differences between the groups for each variable separately. The Scheffe's test was utilized as a post-hoc test whenthe 'F' ratio of the adjusted post-test means was proven to be significant at 0.05 levels of confidence.

RESULTS

Table-I

ANALYSIS OF COVARIANCE ON LEG STRENGTH AND BACK STRENGTH OF PTG CPSTG AND CG

		PTG	CPSTG	CG	SOV	Sum of Square	df	Mean Square	'F' ratio
LS	**Pre-Test** Mean	71.67	71.87	72.40	B W	4.311	2 42	**2.16**	**0.125**
	Post-test Mean	74.87	75.87	71.93	B W	125.38	2 42	62.70	**4.023***
	Adjusted Post-test Mean	74.149	75.967	71.551	B W	164.78 92.40	2 41	92.40 1.51	**54.75***
BS	**Pre-Test** Mean	62.87	62.40	63.47	B W	8.58	2 42	4.30	**0.27**
	Post-test Mean	65.53	66.60	62.00	B W	173.91	2 42	86.96	**5.22***
	AdjustedPost-test Mean	65.578	67.115	61.441	B W	255.16 27.44	2 41	127.58 0.67	**190.64***

* Significant at .05 level of confidence.

(The table value required for significance at a .05 level of confidence with df 2 and 42 and 2 and 41 were 3.21 and 3.23, respectively).

PTG, CPSTG, and CG post-test adjusted mean values are 74.149, 75.967, and 71.551, respectively. With df 2 and 41 at a level of confidence of .05., the calculated 'F' ratio value of 13.685 for the adjusted post-test scores is more significant than the necessary table value of 3.24 for significance.

PTG, CPSTG, and CG post-test adjusted mean values are 65.578, 67.115, and 61.441, respectively. With df 2 and 41 at a level of confidence of 0.05., the calculated 'F' ratio value of

190.64 for the adjusted post-test scores is more significant than the necessary table value of 3.24 for significance.

According to the statistical analysis above, leg strength and back strength was considerably improved following each training cycle. The Scheffé S test was also used to assess which of the matched means greatly enhanced. The outcome of the follow-up examination is displayed in Table II.

Table - II

SCHEFFĚ *S* TEST FOR THE DIFFERENCE BETWEEN THEADJUSTED POST-TEST MEAN OF LEG STRENGTH

	PTG	CPSTG	CG	Mean Difference	Confidence interval at .05 level
LS	74.149		71.551	2.598*	1.14
	74.149	75.967		1.818*	1.14
		75.967	71.551	4.416*	1.14
BS	65.578		61.441	4.137*	0.76
	65.578	67.115		1.537*	0.76
		67.115	61.441	5.674*	0.76

*Significant at .05 level of Confidence.

The adjusted post-test mean difference in leg strength between PTG and CG, PTG and CPSTG, and CPSTG and CG was 2.598, 1.818, and 4.416, respectively. According to Table IV, these differences were significant at the.05 level of confidence. The adjusted post-test mean difference in back strength between PTG and CG, PTG and CPSTG, and CPSTG and CG was 4.1637, 1.537, and 5.674, respectively. These differences were significant at the.05 levels of confidence, according to Table - II.

Based on the study's findings, it can be said that PTG and CPSTG considerably boost leg strength and back strength. Additionally, the study's findings indicate a substantial difference between the training groups in favor of CPSTG.

DISCUSSION ON FINDINGS

The findings of the study are supported by the following studies.

Palanisamy, (2019) confirms that plyometric training found to be significant on Explosive Strength, Muscular Endurance, and Speed. Gunasekar and Balamurugan, (2021) proved that the plyometric training is effective in improving Agility, Sprint, and Explosive power in semi-professional kabaddi players. The specific dynamic constant external resistance exercises are highly recommended as part of an annual training program for junior soccer players Chelly, et al. (2009).

Plyometric training improved sports-specific physical fitness in Kabaddi players by improving explosive power, flexibility, agility, and trunk-lower extremity muscle strength, which is speculated to impact raiding and defense performance positively. Hence, it is recommended that plyometric training be integrated with conventional training to enhance the performance of Kabaddi players.

CONCLUSION

Based on the result of the study, the following conclusions were drawn:

1. According to the study's findings, there was a substantial difference between the training groups in CPSTG's favor.
2. The study's concluded that PTG and CPSTG significantly boosted leg strength.
3. It was determined that both PTG and CPSTG had significantly increased their back strength.

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EFFECT OF WALKING WITH AND WITHOUT LOAD INTERMITTENTWALKING ON HEALTH FITNESS OF ADOLESCENT BOYS

***Dr. S. VIJAYALAKSHMI**
Director, Dept. of Physical Education
Kalasalingam Academy of Research and Education [Deemed to be University]
Srivilliputtur, Tamilnadu – India

****Mr. S. DILIP**
PhD. Research Scholar, Dept. of Physical Education, Annamalai University
Chidambaram – 608 002, Tamilnadu - India.

Abstract:

The purpose of the present investigation was to find out the effects of walking with and without load intermittent walking on selected metabolic health fitness outcomes of adolescent boys. To achieve this purpose sixty (N=60) male college students were randomly selected as subjects from Bangalore University affiliated college in this academic year 2013-14. The selected subjects were ranged between 18-25 years. The selected subjects were divided into three equal groups Such as Walking without Load, Walking with load and Combination of walking with and without Load. Each group consists of 20 subjects. The selected variables were used in this study are Cardio respiratory endurance, Muscular strength and Muscular endurance. Each and assigned to Experimental Group-I underwent Walking without load Experimental group-II underwent Walking with load and Experimental group-III underwent Combination of Walking with and without load. They assessed before and after the training period of twelve weeks. The analysis of covariance was used to find out the significant pre and post mean difference between the groups to analysis the data. The study revealed that the above said variables were significantly improved due to the influence of Walking without Load, Walking with load and Combination of walking with and without Load

Key words: walking without load, walking with load and combination of walking with and without load, cardio respiratory endurance, muscular strength, muscular endurance.

INTRODUCTION

Anderson et.al., (2006) examined the effects of an 8-week program of regular brisk walking, regular brisk walking with abdominal electrical muscle stimulation (EMS), and no exercise on hierarchical self-perceptions, and consider the mediating role ofchanges in anthropometric measures and body composition. Thirty-seven sedentary healthy women (mean age ¼ 38.1; SD ¼ 9.3) provided written informed consent and participated in baseline testing on a range of anthropometric, body composition, and hierarchical self-perception measures. Subsequently participants were randomly assigned to an 8-week program of walking (n ¼ 13), walking+EMS (n ¼ 14), or a control (n ¼ 10) condition. At 8 weeks anthropometric, body composition and self-perception measures were re-assessed. In comparison with the control group, both walking groups had significant reductions in a

number of anthropometric measures and improvements in self- perception measures. The improvements on both anthropometric measures and self- perceptions were greater for the walking+EMS condition, which indicated that changes in self-perception might be mediated by body changes. However, an assessment of the mediation effect between changes in anthropometric measures and self-perception changes did not support this finding. Boone-Heinonen et.al., (2010) in this systematic review, walking (a generally accessible activity for a largely sedentary population), was assessed as a preventive risk factor for development of fatal and nonfatal cardiovascular disease (CVD). Generally, there were dose-dependent reductions in CVD risk with higher walking duration, distance, energy expenditure, and pace. Associations appeared to be stronger for ischemic stroke than other CVD outcomes such as CHD or hemorrhagic stroke. Adjustment for clinical CVD risk factors, obesity, or other types of physical activity generally attenuated but did not eliminate associations. Because functional status may be an important determinant of walking behavior in adults, potential bias due to pre- existing illness is of concern in all studies reviewed, particularly in case-control studies which ascertain walking retrospectively and yielded the strongest associations. Study findings were consistent with current physical activity recommendations, but opportunities for future research include improvements in measurement of walking and other CVD risk factors, more thorough control for pre-existing illness, examination of mediating or moderating conditions such as obesity, and other analytical issues.

Walking provides a wide range of benefits, some of which are more obvious than others. It is the most often indicated physical activity modality to increase population physical activity levels aiming to improve health-related conditions. Most people walk every day but it is often overlooked as an exercise activity. Walking is one of the easiest, and cheapest, ways to improve fitness. It is a light cardiovascular exercise, which means it improves the condition of one heart and lungs. It is also a weight bearing activity, meaning that it will help to improve bone density. Walking works the muscles of lower body while being low impact, which means it, does not put stress on joints. Walking can be done anywhere, try walking up and down hills for a moderate form of exercise. He could also try power walking, which is fast walking that uses more energy than running atthe same pace. Walking is one of the easiest and least expensive ways to stay physically fit. It's also a versatile form of exercise that can be done indoors (many malls and public buildings offer walking routes) or outdoors, and one can tailor the intensity of exercise based upon individual abilities and goals. Whether like to begin walking for exercise or if already established in the habit, these tips can help get the most from workout. Walking isone of the least expensive and most broadly accessible forms of physical activity. It is rarely associated with physical injury and can easily be adopted by people of all ages, including those who have never participated in physical activity. Studies have shown that walking has higher levels of adherence than other forms of physical activity, possibly because it is convenient and overcomes many of the commonly perceived barriers to physical activity: lack of time, lack of fitness or lack of skill. Walking is currently the most popular form of physical activity in the world, with studies from the United Kingdom and United States demonstrating that the prevalence of walking is two to threetimes higher than those of the next most frequently reported activities.

METHODOLOGY

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The purpose of the study was to find out the effect of varied methods of exercise on selected metabolic health fitness outcomes in untrained adult men. To achieve this purpose sixty (N=60) male college students were randomly selected as subjects from Bangalore University affiliated college in this academic year 2013-14. The selected subjects were ranged between 18-25 years. The selected subjects were divided into three equal groups Such as Walking without Load, Walking with load and Combination of walking with and without Load. Each group consists of 20 subjects. The selected variables were used in this study are Cardio respiratory endurance, Muscular strength and Muscular endurance. The subjects were tested the above mentioned variables by using standardized test and consider as pretest score. Three experimental groups were undergone for respective training programs. Each and assigned to Experimental Group-I underwent Walking without load Experimental group-II underwent Walking with load and Experimental group-III underwent Combination of Walking with and without load. The total duration of the training period was fixed for 12 weeks. After the completion of training period all the subjects were tested selected variables by using standardized test and consider as post test score.

RESULTS AND DISCUSSION

Table - 4.1

Analysis of co-variance on cardio respiratory endurance, Muscular Strength andMuscular Endurance of Walking without Load, Walking with load and Combination of walking with and without Load.

		Source of variance	Sum of squares	df	Mean square	F-value
Cardio	**Pre-test**	BG	31.31	2	15.65	0.75
Respiratory Endurance		WG	1191.50	57	20.90	
	Post-test	BG	763.00	2	381.50	22.06*
		WG	985.85	57	17.30	
	Adjusted Mean	BG	858.05	2	429.03	29.70*
		WG	808.96	56	14.45	
Muscular Strength	**Pre-test**	BG	30.10	2	15.05	2.45
		WG	349.50	57	6.13	
	Post-test	BG	1022.23	2	511.12	93.27*
		WG	312.35	57	5.48	

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	Adjusted Mean	BG	828.86	2	414.43	115.35*
		WG	201.20	56	3.59	
Muscular Endurance	**Pre-test**	BG	19.73	2	9.87	2.54
		WG	221.20	57	3.88	
	Post-test	BG	416.10	2	208.05	40.82*
		WG	290.50	57	5.10	
	Adjusted Mean	BG	463.95	2	231.97	70.88*
		WG	183.28	56	3.27	

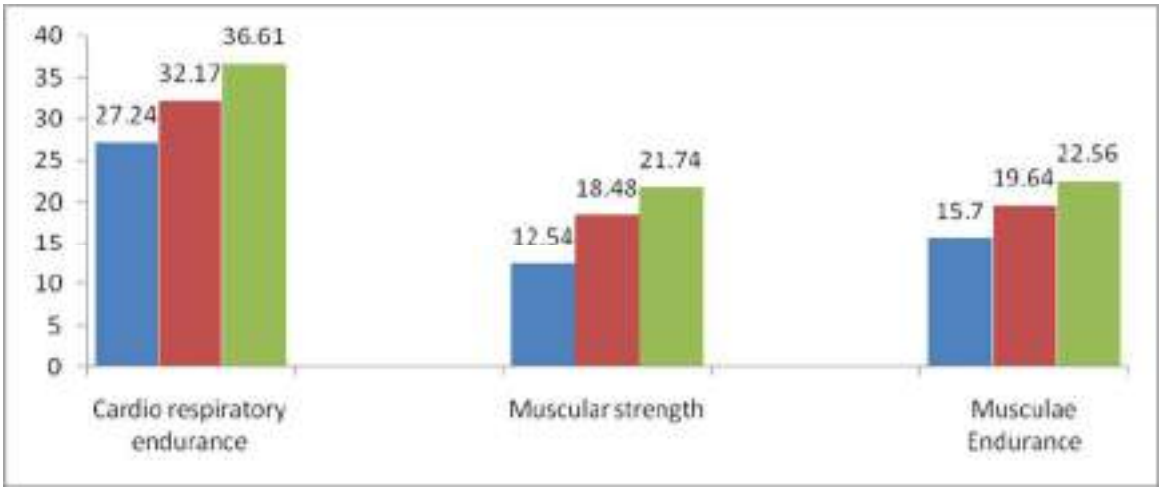
*significant level 0.05 level (3.16).

Table – 4.2

Scheffe's post hoc test for the difference between the adjusted post test means on cardio respiratory endurance, muscular strength and muscular endurance of walking without load, walking with load and combination of walking with andwithout load.

Variables	**Walking without load**	**Walking with load**	**Combination of Walking with and without load**	**Mean difference**	**C.V**
Cardio Respiratory Endurance	27.24	32.17	……..	4.93*	3.02
	27.24	……..	36.61	9.37*	
	……..	32.17	36.61	4.44*	
Muscular Strength	12.54	18.48	……..	5.94*	1.50
	12.54	……..	21.74	9.2*	
	……..	18.48	21.74	3.26*	
Muscular Endurance	15.70	19.64	……..	3.94*	1.44
	15.70	……..	22.56	6.86*	
	……..	19.64	22.56	2.92*	

Bar diagram showing the mean values of pre-test, post-test and adjusted post test means on cardio respiratory endurance, muscular strength and muscular endurance of walking without load, walking with load and combination of walking with and without load.



CONCLUSION

Based on the results of the study the following conclusion will be drawn.

1. It was concluded that the effect of walking without load, walking with load and combination of Walking with and without load showed significant improvement on selected metabolic health fitness outcomes in untrained adult men

2. It was further concluded that Combination of walking with and without load group showed greater improvements in cardio respiratory endurance, muscular strength, and muscular endurance when compare to walking without load and walking with load group.
3. It was further concluded that walking with load group showed greater improvements in cardio respiratory endurance, muscular strength, and muscular endurance when compare to walking without load.

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EFFECTS OF HATHA YOGIC PRACTICES AND PHYSICAL EXERCISEON ACADEMIC ACHIEVEMENT ON AGILITY AND AEROBIC CAPACITY OF ADOLESCENT BOYS

DR. EVELYN SYNTHIYA
Asst. Director of Physical Education,
MIT Campus, Anna University Sports Board, Chennai – 600 044 Tamilnadu - India

Aim: The purpose of the study was to find out the effects of yogic practices and physicalexercise on academic achievement on agility and aerobic capacity of adolescent boys.

ABSTRACT

Vishaw Gaurav (2011) conducted a study on Effects of Hatha Yoga Training on the Health-Related Physical Fitness. Bryan (2012) conducted a study on The effects of yoga on psychosocial variables and exercise adherence improving the physical activity Physical inactivity is a serious issue for the American public. The purpose of this study was to examine agility and aerobic capacity during and after yoga practice, physical exercise on academic year achievement. Forty healthy men performed the following three types of training modalities, the first group underwent yoga practice alternative days, experimental group two underwent physical exercise on alternative days. These two experimental groups trials were performed for three sets in a circuit pattern with four exercises, and the participants performed each set until exhaustion. To find the agility shuttle run test was used and aerobic power queen college step was used. Average and aerobic capacity throughout the exercise session was significantly higher with yogic practices and physical exercise. ($P < 0.05$); however, total agility was significantly greaterin yogic practices and aerobic power were significantly greater in physical exercise. In contrast, there were significant differences in the total excess post-exercise among yogic practices and physical exercise. The results of this study suggest that agility were better improved through yogic practice and aerobic power is better improved through physical exercise.

Keywords: yogic practices, physical exercise, agility, aerobic capacity.

INTRODUCTION

Yoga is an ancient Indian practice, first described in Vedic scriptures around 2500 B.C., which utilizes mental and physical exercises to attain samadhi, or the union of the individual self with the infinite. According to the first comprehensive textual description of yoga, *the* Yoga Sutras, written in the third century B.C., yoga is the cessation of thought waves in the mind. Hatha yoga, one of the many forms or paths of yoga, focuses on overall fitness through pranayama (breath-control exercises), asanas (yoga postures), and chanda (meditation). Like other forms of yoga, hatha yoga is purported to quiet the mind and focus the concentration; however, of all the yoga traditions, the importance of physical fitness is emphasized most in

hatha yoga.Studies have shown that yoga practice can lead to improvements in hand-grip strength, agility and aerobic capacity. However, no research to date has addressed the effects of yoga practice and physical exercise on the agility and aerobic capacity aspects of physical fitness. Madanmohan et al (1983) studied the effect of shavasan and savitri pranayam (a yoga-breathing technique characterized byslow, rhythmical and deep breathing cycles) in trained subjects (yoga training > 1 year) and found significant decrease in agility. Shavasan alone has been shown to be effective in the treatment of hypertension (Datey et al 1969; Patel and North1975). (Madanmohan,1992). Joshi et al (1992) have also demonstrated that six weeks of pranayam breathing course resulted in improved ventilatory functions in the form of lowered respiratory rate. Similar beneficial effects were observed by Makwana et al (1988) after 10 weeks of yoga practice. Bera and Rajapurkar (1993) have reported that yoga training results in significant improvement in cardiovascular endurance and anaerobic threshold. Oken et al (2006) found that hatha yoga practices for 6 months by seniors (65-85 years) resulted in significant improvement in quality of life and physical measures compared to walking exercise and wait-list control groups.

METHODS AND PROCEDURES

Healthy, young 40 subjects were recruited from salem district Govt. boy's schools. No incentives were offered other than the yoga classes and physiologic testing. Following approval of our institutional Human Subjects Review Committee, written informed consent was obtained from 40 subjects (n=40) who volunteered to participate. The age range was 12–15 years (means ± SEM, 13.5 ±1.5). Subjects were expected to attend a 5 class per week for six weeks. Forty Subjects were randomly divided two equal groups n=20 experimental group I underwent yoga practices, n=20 experimental group II underwent physical exercise. The subjects were instructed to refrain from all other forms of exercise while participating in the training program. Additionally, no subject had known heart disease or significant recent joint or muscular injury, as determined by written medical history. All procedures were demonstrated prior to testing. Agilitywas measured by shuttle run test and aerobic capacity was measured by queen college step test. Data were statistically analyzed by paired '*t* 'tests, with results expressed as means ± SEM. Significance was accepted at the $p<0.05$ level.

ANALYSIS OF THE STUDY

SIGNIFICANCE OF MEAN GAINS / LOSSES BETWEEN PRE AND POST TEST OF YOGIC PRACTICES AND PHYSICAL EXERCISE GROUP ON AEROBIC CAPACITY OF ACADEMIC ACHIEVEMENT OF ADOLESCENT BOYS

Variables		Mean ± S.D	Std. Error Mean	M.D	't' Ratio
Aerobic capacity	PRE-TEST	40.45±1.40	0.37	2.06	21.21*

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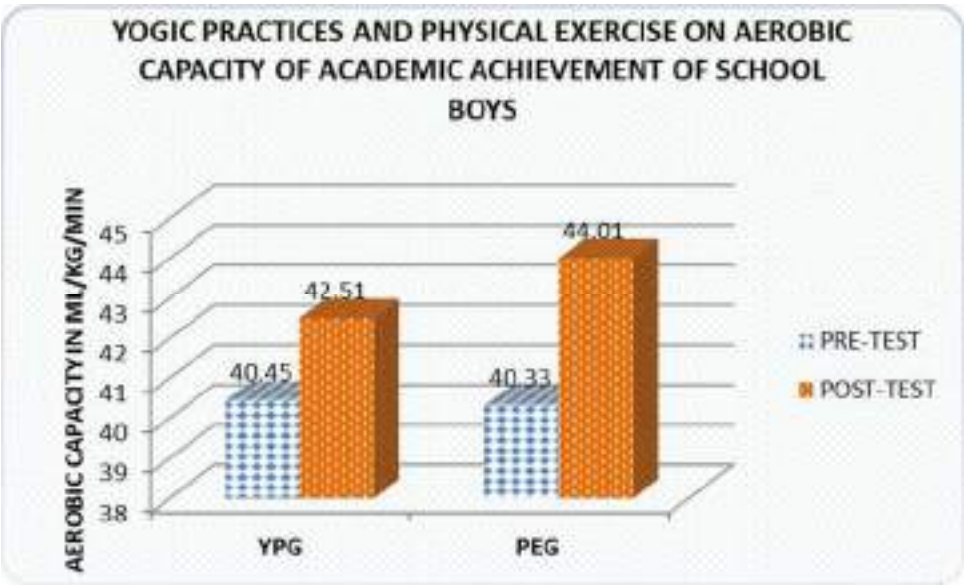
(Ml / kg / per minute) In yogic practices group	POST-TEST	42.51±1.25	0.32		
Aerobic capacity (Ml / kg / per minute) In physical exercise group	PRE-TEST	40.33 1.36	.36	3.06	15.07*
	POST-TEST	44.01± 1.20	.31		

Significant at 0.05 levels

The obtained 't' ratio's for pre and post test mean difference in the yogic practices group aerobic capacity was (21.21) and physical exercise group aerobic capacity was (15.07) respectively. The obtainer' ratio is when compared with the table value of 2.14 for the degrees of freedom (1, 14) it was found to be statistically significant at 0.05 level of confidence.



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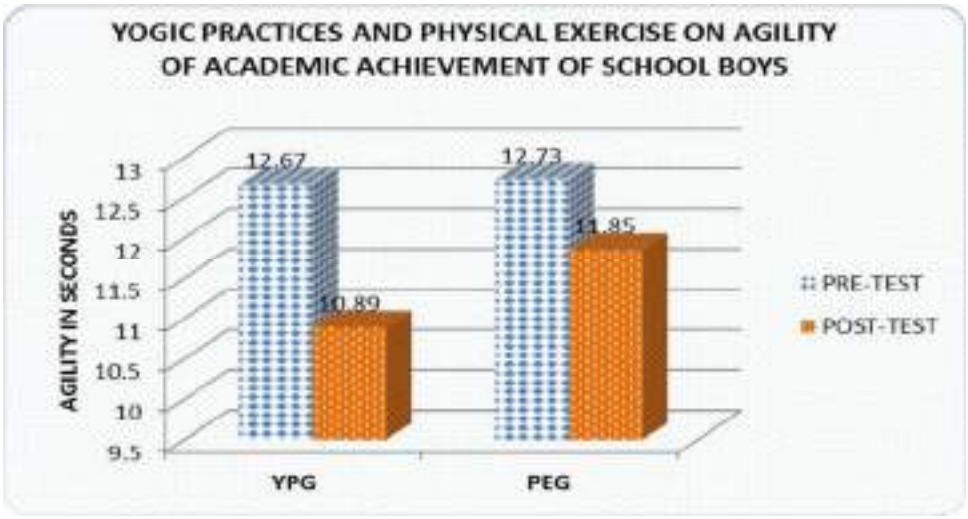
SIGNIFICANCE OF MEAN GAINS / LOSSES BETWEEN PRE AND POST TEST OF YOGIC PRACTICES AND PHYSICAL EXERCISE GROUP ON AGILTY OF ACADEMIC ACHIEVEMENT OF ADOLESCENT BOYS

Variables		Mean ± S.D	Std. Error Mean	M.D	't' Ratio
Agility(in CM) In yogic practices group	PRE-TEST	12.67± .63	.16	1.77	13.36*
	POST-TEST	10.89± 0.52	.13		
Agility (in CM) In physical exercise group	PRE-TEST	12.73±0.60	0.15	0.88	6.29*
	POST-TEST	11.85±0.76	0.19		

Significant at 0.05 levels

The obtained 't' ratio's for pre and post test mean difference in the yogic practices group agility was (13.36) and physical exercise group agility was (15.07) respectively. The obtainer' ratio is when compared with the table value of 2.14 for the degrees of freedom (1, 14) it was found to be statistically significant at 0.05 level of confidence.



Result:

1. Hatha Yogic Practices improved the aerobic capacity and agility of academic year achievement of adolescent boys.
2. Hatha Physical exercise training improved the aerobic capacity and agility of academic

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year achievement of adolescent boys.

3. Hatha Yogic Practices improved the agility better then the physical exercise of academic year achievement of adolescent boys.
4. Hatha Physical exercise improved the aerobic capcity better then the Yogic Practices of academic year achievement of adolescent boys.

CONCLUSION:

Hatha Yogic practices improved agility and physical exercise improved aerobic capacityof academic year achievement of adolescent boys.

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A LONGITUDINAL STUDY ON IMPACT OF SEDENTARY CONSEQUENCES ON MOTOR FITNESS OF WOMEN IN INFORMATION TECHNOLOGY SECTOR

***Dr. A. DOMINIC XAVIER JAMES**,
Director, Department of Physical Education, AMET Institute ofScience and Technology, ECR, Thenpattinam.
****LINGALA UMA RANI**,
Physical *Directress, Stanley College of Engineering and Technology forWomen, Hyderabad.*
*****K. SRAVANI**,
Lecturer, Sri Krishna College of Physical Education, Nalgonda.

A sedentary life can affect our health in ways we may not realize. The study was predominantly aimed to examine the sedentary consequences on motor fitness among women in information technology sector. To ascertain the purpose of the study, the investigators were able to get hundred (n=100) women who were professionally working in information technology(IT) sector as samples by means of purposive sampling method. The samples were from three metropolitan cities namely Bangalore, Chennai and Hyderabad. According to their personal reports and interaction with the samples by the investigators, they were all confirmed to lead sedentary life style. The key factor for their sedentary behavior was their nature of job which demands them to sit for almost more than 9 hours every day. They were all validated for addicting sitting disease. The samples were tested on motor fitness components such as agility, abdominal muscular strength and endurance and flexibility. The first assessment was held in 2020, January and all the samples' chronological age was 21 as per records. The data was collected from all samples. Their motor fitness components agility, abdominal muscular strength and endurance and flexibility were assessed by shuttle run test, flexed leg sit ups and sit and reach box test respectively. The data was obtained by means appropriate assessments from the same samples after three years from all samples again in the year 2023, January, as the samples reached 24 years. The level of motor fitness of sedentary women in two distinct periods was statistically analyzed. Independent't' test was computed to analyze the differences in the level of motor fitness in the years 2020 and 2023. Finally, the longitudinal assessment confirmed that prolonged continuity of sedentary behavior drastically affected the motor fitness and further statistically proved that in the year 2023 they were found to be with poor motor fitness when compared to their fitness level in 2020.

Key Words: Longitudinal Study, Sedentary, Motor Fitness, Information Technology

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INTRODUCTION

Four to five million deaths per year could be averted if the global population was more physically active. These global guidelines enable countries to develop evidence-based national health policies and support the implementation of the WHO Global action plan on physical activity 2018-2030. Action and investment in policies to promote physical activity and reduce sedentary behaviour can help to achieve the 2030 Sustainable Development Goals, particularly Good Health and Wellbeing, Sustainable Cities and Communities, Climate Action, as well as Quality Education. Regular physical activity is a key protective factor for the prevention and management of non communicable diseases (NCDs) such as cardiovascular disease, type-2 diabetes, and a number of cancers. Physical activity also benefits mental health, includingprevention of cognitive decline and symptoms of depression and anxiety; and can contribute to the maintenance of healthy weight and general well-being. Global estimates indicate that 27.5% of adults and 81% of adolescents do not meet the 2010 WHO recommendations for physical activity with almost no improvements seen during the past decade. There are also notable inequalities: data show that in most countries girls and women are less active than boys and men, and that there are significant differences in levels of physical activity between higher and lower economic groups, and between countries and regions.

Physical fitness is necessary for everyone to maintain their body. Physical and psychological health is maintained positive with the help of general motor fitness. There is disagreement among experts about the relative importance of health-related and motor- performance physical fitness. While both types of fitness are obviously desirable, their relative values should be determined by an individual's personal fitness objectives. Different types of fitness may be important not only to different individuals but also to the same individual at different times.

Physical activity and sedentary behavior are important health determinants. Sufficient regular physical activity has positive effects on physical and psychological well-being, while excessive sedentary behaviour is associated with negative health outcomes. Nevertheless, children's physical inactivity and sedentary lifestyles are still increasing worldwide. Similar to children in other countries, 45% of the Dutch primary schoolchildren do not meet the World Health Organization's recommendation of at least 60 min of moderate-to-vigorous physical activity a day. For health and wellbeing, WHO recommends at least 150 to 300 minutes of moderate aerobic activity per week (or the equivalent vigorous activity) for all adults and an average of 60 minutes of moderate aerobic physical activity per day for children and adolescents. Adults should do at least 150 minutes to 300 minutes of moderate-intensity aerobic physical activity throughout the week, or do at least 75 to 150 minutes of vigorous- intensity aerobic physical activity throughout the week, or

an equivalent combination of moderate- and vigorous- intensity activity for substantial health benefits. Adults should also do muscle-strengthening activities at moderate or greater intensity that involve all major muscle groups on 2 or more days a week, as these provide additional health benefits. Limiting sedentary time and being physically active is good for health.

With approximately 8 hours of one's waking day spent at work, occupational tasks and environments are important influencers on an individual's physical activity and sedentary behaviors. Little research has compared physical activity and sedentary behavior and cardiometabolic outcomes between occupational groups. Despite the large quantity of supporting data relating Physical activity and, increasingly, sedentary behaviors to health outcomes across the life-span, important evidence gaps remain. In particular, there is less evidence from low- and middle-income countries and economically disadvantaged or underserved communities, and a dearth of evidence from subpopulations including people living with disabilities. Additionally, greater investment is needed in research to build evidence on the precise shape of the dose- response curve between physical activity and sedentary behavior and health outcomes; the health benefits of light-intensity physical activity; and the joint association between physical activity and sedentary 193ehavior and health outcomes across the life course.

METHODOLOGY

To examine the longitudinal association of sedentary behavior with distinct period on motor fitness, the investigators were able to find out 175 women working in information technology sector with sedentary behavior. They were hail from three metropolitan cities namely Bangalore, Chennai and Hyderabad. Of the 175 women, 75 women were declared unfit for motor fitness assessment by the well experienced medical doctors. Thereby, the investigation was initiated with 100 samples. The samples age and weight ranged between 21 to 26 years and 52kg to 58kg respectively. The samples were verbally informed about the content of the study by researchers during company visits. All the subjects have revealed that they have no ailments of any sort and were taking medicines for treatment after a general medical checkup done on them.

The physician confirmed this and the subjects were given clearance to take part in the assessment programme. Heredity, age and race are some of the factors which could not be altered. Here the individual needs sheer determination to either avoid these habits or alter accordingly. No external help could change them better unless they themselves eat as much as required and involve themselves in daily routine. Data collection took place in two different periods at their age of 21(2020) and 26(2023). They were asked to provide written informed consent to provide data. The assessments were held on three motor

fitness aspects namely agility, abdominal muscular strength and endurance and flexibility. They provided data on criterion variables in 2020, January and 2023, January.

Research Design and Statistical Technique

Random sampling method was adopted for the selection of subjects. They were selected from the same field of occupation. The Independent Samples t Test was used to compare the means of data collected in two different periods (2020 and 2023) on motor fitness components considered for investigation in order to determine whether there was statistical evidence that the associated population means were significantly different. In all cases 0.05 level of confidence was fixed to test hypotheses.

RESULTS

Table-I

Mean and Independent 'T' Test on Motor Fitness Components ofSedentary Women in Each Period

S.No.	Variables	2020 21 Year Mean	2023 24 Year Mean	Mean Difference	Std. Dev. (±)	σ DM	't' Ratio
1	Agility	11.72	12.16	0.44	0.25	0.06	**6.76***
2	Flexibility	41.40	38.13	3.26	2.01	0.52	**6.27***
3	Abdominal Muscular Strength and Endurance	23.53	20.73	2.80	3.01	0.78	**5.38***

Significant at 0.05 level (Table value required for significance at 0.05 level for 't' test with df98 is 1.98)

The mean value obtained on agility, flexibility and abdominal muscular strength and endurance in the years 2020 and 2023 from sedentary behavior women working in information sector are 11.72, 40.41 and 23.53 and 12.16, 38.13 and 20.73 respectively. The obtained 't' test values of agility, flexibility and abdominal muscular strength and endurance 6.76, 6.27 and 5.38 are greater than the table value of 1.98 with df 98 at 0.05 level of confidence. The analysis of data pertaining to the motor fitness components is unequal on both periods. Thus, it has been understood that there is significant difference exist between the data taken on both periods on motor fitness. The mean values of 2020 and 2023 motor fitness components of women in IT sector are graphically represented in the figure -I.

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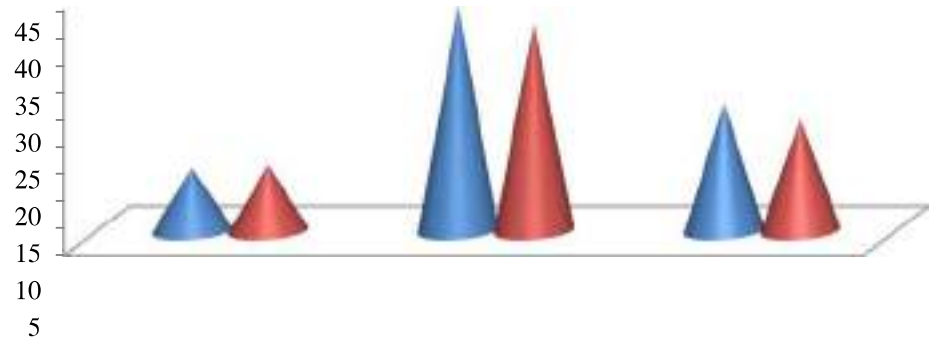
Mean Value of Sedentary Behavior in 2020 and 2023



	Agility	Flexibility	Abdominal MuscularStrength and Endurance
2020 (21 Year)	11.72	41.4	23.53
2023 (24 Year)	12.16	38.13	20.73

Discussion on Findings:

The data collected in 2020 and 2023 has given comprehensible results that the more one exist with sedentary behavior highest will be the decline in motor fitness. The longitudinal analysis of the study portrays the inverse relationship of sedentary life style with motor fitness. There many studies which supports the results of the longitudinal study. Phillipp Schwarzfischer et.al (2019) concluded that more time per day in sedentary behavior was associated with a higherBMI over the course of five years, whereas higher MVPA had an inverse effect. Also showed that PA decreased, and SB increased in earlier years than previously thought. MVPA remained relatively stable until 8 years, but revealed a drop-off at 11 years, identifying this period as a crucial time for intervention. Present bidirectional associations, where lower body size was associated with higher physical activity and lower sedentary behavior, indicated the need for an integrated approach of activity and weight control for obesity prevention. Fernanda M. Silva et.al(2020) suggested that sedentary time can be associated with poor physical fitness in adults (i.e., muscular strength, cardiorespiratory fitness and balance), so strategies should be created toencourage behavioral changes.

Conclusion:

A longitudinal study on impact of sedentary consequences on motor fitness of women ininformation technology sector has come out with the following conclusions.

1. There is a significant drop off in agility in 2023 data analysis when compare to the2020 analysis.
2. It is confirmed in 2023 analysis that due to the continuation of sedentary

behavior, the flexibility level has been found to get decreased when compare to the flexibility condition among women in the year 2020.

3. A significant drop out in abdominal muscular strength and endurance has beenevident in 2023 among the women in IT sector.

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EFFECTS OF PLYOMETRIC TRAINING AND COMBINED PLYOMETRIC AND STRENGTH TRAINING PROGRAMS ON STRENGTH PARAMETERS

*** Dr. D. RAMESH**

Director of Physical Education

Periyar Maniyammai Institute of Science and Technology [Deemed to be University] Tanjavur, Tamilnadu – India

**** Mr. K. VENKATESAN**

PhD. Research Scholar, Dept. of Physical Education, Annamalai University

Chidambaram – 608 002, Tamilnadu - India.

ABSTRACT

The study aimed to ascertain the effects of PT (Plyometric Training) and CPST (Combined Plyometric and Strength Training) programs on certain strength parameters. Forty- five male kabaddi players who were enrolled at St. Peter's University in Chennai, Tamil Nadu, for the academic year 2020–2021 served as the subjects to achieve the objective. The players maintained a consistent schedule of academic and extracurricular activities by the requirements of the curriculum, and all resided in the St. Peter's University boy's hostel. The age, height and weight of the subjects were ranged from 18 to 25 (mean age = 19 $\pm$ 7 months) years, 160 to 174 cms (mean height = 168 $\pm$ 0.25 cms) and 52 to 65 kg (mean strength = 58.5 + 0.35 kg) respectively. They were split into three equal groups, each with fifteen participants; two of these groups were used for experiments, and the third acted as a control group. Group I (n = 15) plyometric training group [PTG] and Group II (n = 15) plyometric and strength training group [CPSTG] underwent respective training for twelve weeks, and Group III (n = 15) served as the study's control group which did not take part in any special training except for their regular sports activities. The criterion factors used for the current study were leg and back strength. Data was collected from groups before and immediately after the training program. Analysis of covariance (ANCOVA) was performed to find any significant differences between the groups for each variable separately. The Scheffé S test was utilized as a post-hoc test when the 'F' ratio of the adjusted post-test means was proven to be significant at 0.05 levels of confidence. Based on the result of the study, it was concluded that PTG and CPSTG significantly boosted leg strength and back strength. According to the study's findings, there was a substantial difference between the training groups in CPSTG's favor.

Key Words: Plyometric Training, Strength Training, Strength Parameters

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INTRODUCTION

Various training approaches enhance various physical and motor fitness aspects at multiple levels. These fundamental training processes will be more effective if modified to fit the person or group's needs. The optimum training program improves desired quality faster while avoiding negative consequences. Physical training is one of the most significant components of high-performance training. Physical training maximizes an athlete's physiological potential and enhances biomotor talents to the best level possible.

Many instructors today employ the well-liked training method known as plyometrics. It has been effective in bridging the gap between raw strength and power. Any workout that enables players to benefit from the stretch-shortening cycle to create an explosive movement is calledplyometrics. Even though plyometric exercise has been around for a while, there is still disagreement over its efficacy and safety. This literature review aims to review all pertinent data on the subject to evaluate the effectiveness of plyometric exercise as a training method.

Strength training aims to overcome a particular obstacle, whether that resistance comes in the shape of an apparatus, a sports object, or one's own body weight. However, to be successful, one must train with a specific sort of progressive resistance exercise tailored to the individual's demands and the activity in question. Resistance training contributes to the preservation of functional capacities, has substantial impacts on the musculoskeletal system, and helps to avoid sarcopenia, lower-back discomfort, osteoporosis, and other problems, according to research.

Methodology

Forty-five male kabaddi players who were enrolled at St. Peter's University in Chennai, Tamil Nadu, for the academic year 2020–2021 served as the subjects to achieve the objective and all resided in the St. Peter's University boy's hostel. The age, height and weight of the subjects were ranged from 18 to 25 (mean age = 19 $\pm$ 7 months) years, 160 to 174 cms (mean height = 168 $\pm$ 0.25 cms) and 52 to 65 kg (mean strength = 58.5 + 0.35 kg) respectively.

Training Programme

The experimental groups received different training programs during the training period in addition to the regular kabaddi practice of their competition-compliant course of study. The length of the training sessions varied daily but lasted from 45 minutes to an hour. Group I had engaged in PT three days a week for twelve weeks, Group II had been involved in CSPT three days a week for twelve weeks, and Group III served as the control group and did not engage in any particular exercise comparable to that of the experimental groups. They did, however, complete the required coursework for their course of study. Under the strict supervision of the researcher, the experimental groups underwent their respective training regimens during the evening hours. The training was carried out on grassland to lessen the risk of injury. All participants in this research were closely observed throughout the training regimen to prevent injuries.

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Experimental Design and Statistical Technique

Random sampling method was adopted for the selection of subjects. Randomized pre test post test control group design was adopted for this study. The criterion factors used for the current study were leg and back strength and Leg Dynamometer was used to assess the criterion factor. Data was collected from groups before and immediately after the training program. Analysis of covariance (ANCOVA) was performed to find any significant differences between the groups for each variable separately. The Scheffe's test was utilized as a post-hoc test when the 'F' ratio of the adjusted post-test means was proven to be significant at 0.05 levels of confidence.

Results

Table-I

ANALYSIS OF COVARIANCE ON LEG STRENGTH AND BACK STRENGTH OF PTG CPSTG AND CG

		PTG	CPSTG	CG	SOV	Sum of Square	df	Mean Square	'F' ratio
LS	**Pre-Test** Mean	71.67	71.87	72.40	B W	4.311	2 42	**2.16**	**0.125**
	Post-test Mean	74.87	75.87	71.93	B W	125.38	2 42	62.70	**4.023***
	Adjusted Post-test Mean	74.149	75.967	71.551	B W	164.78 92.40	2 41	92.40 1.51	**54.75***
BS	**Pre-Test** Mean	62.87	62.40	63.47	B W	8.58	2 42	4.30	**0.27**
	Post-test Mean	65.53	66.60	62.00	B W	173.91	2 42	86.96	**5.22***
	Adjusted Post-test Mean	65.578	67.115	61.441	B W	255.16 27.44	2 41	127.58 0.67	**190.64***

* Significant at .05 level of confidence.

(The table value required for significance at a .05 level of confidence with df 2 and 42 and 2 and 41 were 3.21 and 3.23, respectively).

PTG, CPSTG, and CG post-test adjusted mean values are 74.149, 75.967, and 71.551, respectively. With df 2 and 41 at a level of confidence of .05., the calculated 'F' ratio value of 13.685 for the adjusted post-test scores is more significant than the necessary table value of 3.24 for significance.

PTG, CPSTG, and CG post-test adjusted mean values are 65.578, 67.115, and 61.441,

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respectively. With df 2 and 41 at a level of confidence of 0.05., the calculated 'F' ratio value of 190.64 for the adjusted post-test scores is more significant than the necessary table value of 3.24 for significance.

According to the statistical analysis above, leg strength and back strength was considerably improved following each training cycle. The Scheffé S test was also used to assess which of the matched means greatly enhanced. The outcome of the follow-up examination is displayed in Table II.

Table - II
SCHEFFĚ *S* TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POST-TEST MEAN OF LEG STRENGTH

	PTG	CPSTG	CG	Mean Difference	Confidence interval at .05 level
LS	74.149		71.551	2.598*	1.14
	74.149	75.967		1.818*	1.14
		75.967	71.551	4.416*	1.14
BS	65.578		61.441	4.137*	0.76
	65.578	67.115		1.537*	0.76
		67.115	61.441	5.674*	0.76

*Significant at .05 level of Confidence.

The adjusted post-test mean difference in leg strength between PTG and CG, PTG and CPSTG, and CPSTG and CG was 2.598, 1.818, and 4.416, respectively. According to Table IV, these differences were significant at the.05 level of confidence. The adjusted post-test mean difference in back strength between PTG and CG, PTG and CPSTG, and CPSTG and CG was 4.1637, 1.537, and 5.674, respectively. These differences were significant at the.05 levels of confidence, according to Table - II.

Based on the study's findings, it can be said that PTG and CPSTG considerably boost leg strength and back strength. Additionally, the study's findings indicate a substantial difference between the training groups in favor of CPSTG.

DISCUSSION ON FINDINGS

The findings of the study are supported by the following studies.

Palanisamy, (2019) confirms that plyometric training found to be significant on Explosive Strength, Muscular Endurance, and Speed. Gunasekar and Balamurugan, (2021) proved that the plyometric training is effective in improving Agility, Sprint, and Explosive power in semi-professional kabaddi players. The specific dynamic constant external resistance exercises are highly recommended as part of an annual training program for

junior soccer players Chelly, et al. (2009).

Plyometric training improved sports-specific physical fitness in Kabaddi players by improving explosive power, flexibility, agility, and trunk-lower extremity muscle strength, which is speculated to impact raiding and defense performance positively. Hence, it is recommended that plyometric training be integrated with conventional training to enhance the performance of Kabaddi players.

CONCLUSION

Based on the result of the study, the following conclusions were drawn:

1. The study's findings concluded that PTG and CPSTG significantly boosted leg strength.
2. It was determined that both PTG and CPSTG had significantly increased their back strength.
3. According to the study's findings, there was a substantial difference between the training groups in CPSTG's favor.

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EFFECT OF CIRCUIT AND FLOOR AEROBIC EXERCISE TRAINING ON MUSCULAR STRENGTH AND MUSCULAR ENDURANCE AMONG UNIVERSITY MEN BALL BADMINTON PLAYERS

*** Dr. S. SELVAKUMAR**
Director & Head, Dept. of Physical Education,
BS Abdur Rahman Crescent Institute of Science and Technology, [Deemed to be University]
Chennai – 600 048, Tamilnadu - India.

**** Lt. Dr. N. UMA**
Director of Physical Education
C Kandaswami Naidu College for Women, Cuddalore, Tamilnadu – India

ABSTRACT

The key purpose of the study was to find out the circuit and floor aerobic exercise training on muscular strength and muscular endurance of University Men Ball Badminton Players. To achieve the purpose, Forty-Five Ball Badminton players from Tamilnadu Physical Education and Sports University and B. S. Abdur Rahman Crescent Institute of Science and Technology [Deemed to be University], Chennai, Tamilnadu is one of the best Sports Practices given to students and also very good sports infrastructure facilities both internal and external were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into three equal groups of fifteen each. The group I underwent circuit training, group II underwent floor aerobic exercise training and group III acted as a control group and did not participate in any training programme. The two experimental groups were participated the training for a period of eight weeks to find out the outcome of the training packages. The data collected from the three groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA). This was achieved by the application of the analysis of covariance, Whenever the adjusted post-test means were found significant, the Scheffe's post-hoc test was administered to find out the paired means difference. To test the obtained results on variables, level of significance 0.05 was chosen and considered as sufficient for the study. The result revealed that circuit and floor aerobic exercise trainings developed muscular strength and muscular endurance of the Ball Badminton players and also observed mean difference among circuit and floor aerobic training and control groups. But the mean difference between circuit and floor aerobic training groups was not significant.

Key Words:
Ball Badminton, Circuit, Floor Aerobic Exercise, Muscular Strength, Muscular Endurance.

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INTRODUCTION

Circuit training is an efficient and challenging form of conditioning. It works well for developing strength, strength (both aerobic and anaerobic), flexibility and coordination. Its versatility has made it popular with the general public right through to elite athletes. Circuit training is a practical method entailing some preliminary planning, but beyond that, it needs co-ordination. Athletes find it motivating since it makes conditioning fun and challenging through competition against team mates. Circuit training is a continuous series of exercises attempting to improve as many components of physical fitness as possible especially strength. Aerobics refers to a variety of exercises that stimulates heart and lungs activity for a time period sufficiently long to produce beneficial changes in the body. Running, swimming, cycling and jogging are typical aerobic exercises.

OBJECTIVES AND METHODOLOGY

The investigation was done to find out the circuit and floor aerobic exercise training on muscular strength, muscular endurance men ball badminton players. To achieve the purpose, forty-five ball badminton players from Tamilnadu Physical Education and Sports University and B. S. Abdur Rahman Crescent Institute of Science and Technology [Deemed to be University], Chennai, Tamilnadu were selected as subjects at random and their ages ranged from 18 to 25 years. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (N=45) were randomly assigned to three equal groups of fifteen players each. The groups were assigned as circuit, floor aerobic exercise training and control group in an equivalent manner. The group I underwent circuit training, group II underwent aerobic training and group III acted as a control group. The two experimental groups were participated the training in three alternative days in a week for a period of eight weeks and to find out the outcome of the training packages and the control group did not participated in any training programme. The data required to test the variables in the present study was collected from all subjects before they had to treat with the respective treatments. It was assumed as pre-test. After completion of treatment they were tested again as it was in the pre-test on variables used in the present study. This test was assumed as post-test. Analysis of covariance (ANCOVA) was applied because the subjects were selected random, but the groups were not equated in relation to the factors to be examined. Hence the difference between means of the three groups in the pre-test had to be taken into account during the analysis of the post-test differences between the means. This was achieved by the application of the analysis of covariance, where the final means were adjusted for differences in the initial means, and the adjusted means were tested for significance. Whenever the adjusted post-test means were found significant, the Scheffe's post-hoc test was administer to find out the paired means difference. To test the obtained results on variables, level of significance 0.05 was chosen and considered as sufficient for the study.

Table No- 1

Computation of Analysis of Covariance of Mean of Circuit, Floor Aerobic Exercise Training and Control Groups on Muscular Strength (CTG, FAETG& CG)

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	CTG	FAETG	CG	Source of Variance	Sum of Squares	Df	Means Squares	F-ratio
Pre-Test Means	11.20	11.40	11.33	**BG**	0.311	2	0.156	0.04
				WG	163.333	42	3.889	
Post-Test Means	13.46	14.53	11.60	**BG**	66.133	2	33.067	9.57*
				WG	145.067	42	3.454	
Adjusted Post-Test Means	13.47	14.52	11.58	**BG**	65.963	2	32.981	9.44*
				WG	143.213	41	3.493	

* Significant at 0.05 level of confidence

Table 1 reveals that the obtained 'F'-ratio for the pre-test means among the groups on muscular strength are 11.20 for experimental group – I, 11.40 for experimental group – II and 11.33 for control group. The obtained 'F'-ratio 0.04 is lesser than the table 'F'-ratio 3.21.

Hence the pre-test mean 'F'-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. The post-test means are 13.46 for experimental group – I, 14.53 for experimental group – II and 11.60 for control group. The obtained 'F'-ratio 9.57 is higher than the table 'F'-ratio 3.21. Hence the post-test mean 'F'-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 42. The adjusted post-test means are 13.47 for experimental group – I, 14.52 experimental group – II and 11.58 for control group. The obtained 'F'-ratio 9.44 is higher than the table 'F'-ratio 3.22. Hence the adjusted post-test mean 'F'-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. It is concluded that there is a significant mean difference among circuit training group, floor aerobic training group and control group, in developing muscular strength of ball badminton players.

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Figure- 1

Adjusted Post Test Differences of the Circuit Training, Floor Aerobic Exercise Training and Control Groups on Muscular Strength (CTG, FAETG & CG)

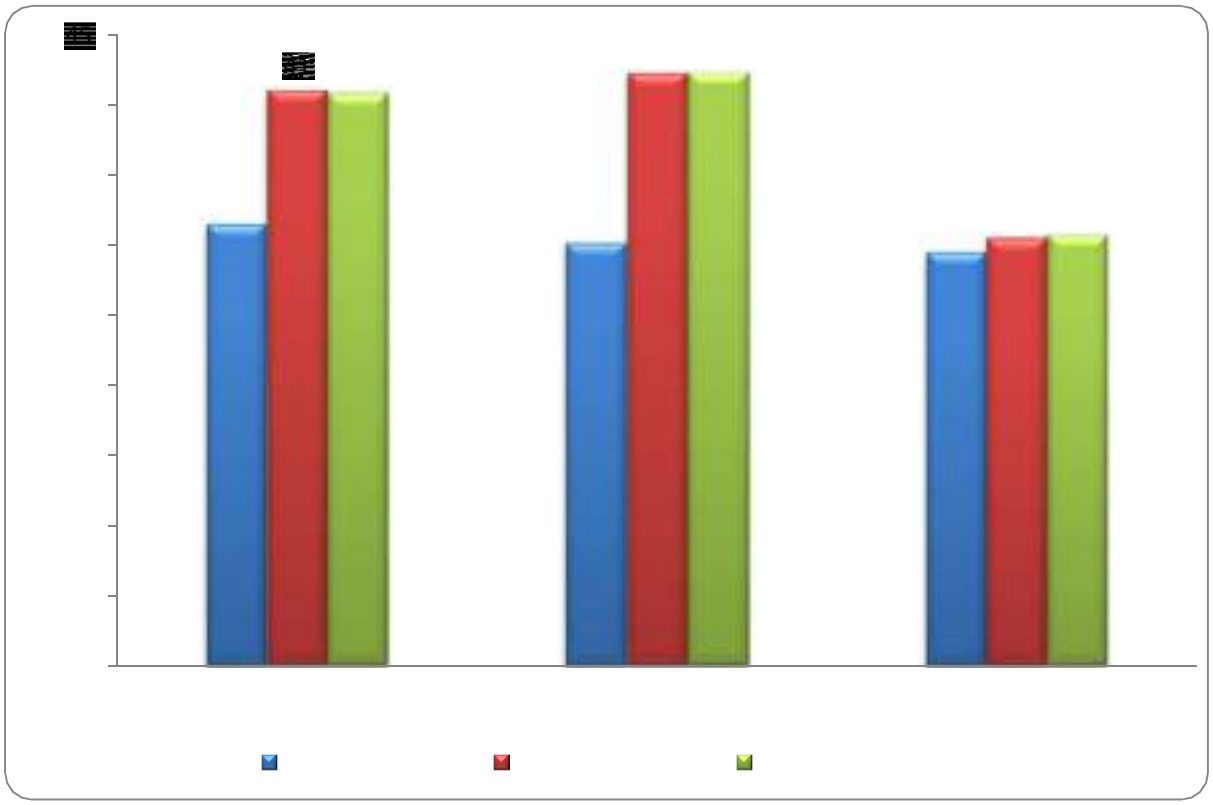

Table No-2

The Scheffe's Test for the Differences between the Adjusted Post Test Means on Muscular Strength

Adjusted Post-Test means			Mean Difference	CI
Circuit Training	Floor Aerobic Exercise Training	Control Group		
13.47	14.52	---	1.05	1.73
13.47	---	11.58	1.89*	
---	14.52	11.58	2.94*	

* Significant at 0.05 level of confidence

Table II shows the post hoc analysis obtained on adjusted post test means. The mean difference required for the confidential interval to be significant is 1.73. It is observed that the

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circuit training group has significantly improved muscular strength better than the control group. The floor aerobic training group also has significantly improved muscular strength better than the control group.

Table No- 3

Computation of Analysis of Covariance of Mean of Circuit Training, Floor Aerobic Exercise Training and Control Groups on Muscular Endurance (CTG, FAETG& CG)

	CTG	ATG	CG	Source of Variance	Sum of Squares	Df	Means Squares	F-ratio
Pre-Test Means	31.53	30.13	29.53	**BG**	31.600	2	15.800	1.24
				WG	533.200	42	12.695	
Post-Test Means	41.00	42.20	30.53	**BG**	1235.511	2	617.756	110.81*
				WG	234.133	42	5.575	
Adjusted Post-Test Means	40.83	42.24	30.66	**BG**	1168.787	2	584.394	107.76*
				WG	222.330	41	5.423	

* Significant at 0.05 level of confidence

The above table III reveals that the obtained 'F'-ratio for the pre-test means among the groups on muscular endurance were 31.53 for experimental group – I, 30.13 for experimental group – II and 29.53 for control group. The obtained 'F'-ratio 1.24 is lesser than the table 'F'-ratio 3.21. Hence the pre-test mean 'F'-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. The post-test means are 41.00 for experimental group – I, 42.20 for experimental group – II and 30.53 for control group. The obtained 'F'-ratio 107.76 is higher than the table 'F'-ratio 3.21. Hence the post-test mean 'F'- ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 42. The adjusted post-test means are 40.83 for experimental group – I, 42.24 experimental group – II and 30.66 for control group. The obtained 'F'-ratio 107.76 is higher than the table 'F'-ratio

3.22. Hence the adjusted post-test mean 'F'-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 41. It has been concluded that there is a significant mean difference among circuit training group, floor aerobic exercise training group and control group, in developing muscular endurance among ball badminton players.

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Figure–II
Adjusted Post Test Differences of the Circuit Training, Floor Aerobic Exercise Training and Control Groups on Muscular Endurance (CTG, FAETG & CG)

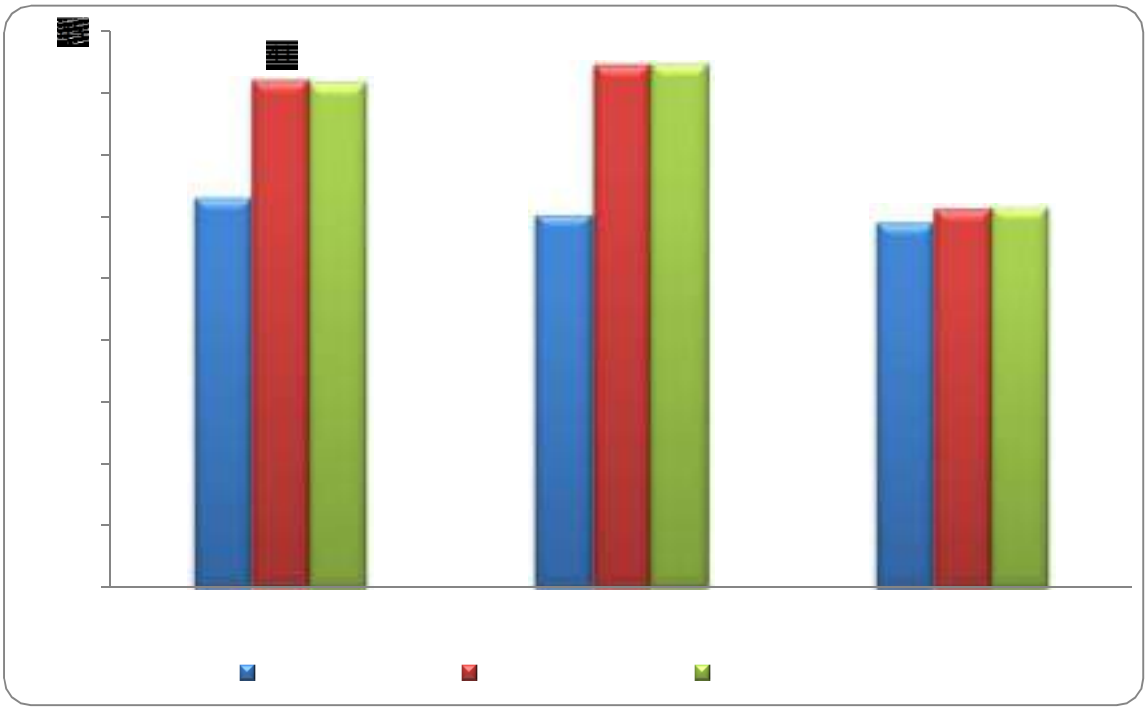

Table No-4

The Scheffe's Test for the Differences between the Adjusted Post Test Means on Muscular Endurance

Adjusted Post-Test means			Mean Difference	CI
Circuit Training	Floor Aerobic Exercise Training	Control Group		
40.83	42.24	---	1.41	2.15
40.83	---	30.66	10.17*	
---	42.24	30.66	11.58*	

* Significant at 0.05 level of confidence

Table No 4 shows the post hoc analysis obtained on adjusted post test means. The mean difference required for the confidential interval to be significant is 2.15. It is observed that the circuit training group has significantly improved muscular endurance better than the control group. The floor aerobic exercise training group also significantly improved muscular strength better than the control group.

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Conclusion

1. There is significant improvement among the ball badminton players of circuit training group on muscular strength.
2. Significant improvement among the ball badminton players of circuit training group on muscular endurance is a clear evident.
3. In the control group, the obtained 'f' value on all the variables are failed to reach the significant level.

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COMBINED AND ISOLATED TREATMENT OF PLYOMETRIC CIRCUIT AND AEROBIC TRAINING IMPACT ON ATTACKING PERFORMANCE OF VOLLEYBALL ARCH ATTACKERS

*** Lt. Dr. N. UMA**
Director of Physical Education
C Kandaswami Naidu College for Women, Cuddalore, Tamilnadu – India

**** Dr. S. SELVAKUMAR**
Director & Head, Dept. of Physical Education, BS Abdur Rahman Crescent Institute of Science and Technology, [Deemed to be University]
Chennai – 600 048, Tamilnadu, India.

ABSTRACT

The significant purpose of the study was to find out the impact of combined and isolated effect of plyometric circuit training and aerobic training on attacking performance of volleyball arch attackers. In order to achieve the purpose of the study, sixty male volleyball players participated in inter district matches, Chennai, Tamil Nadu, were selected as subjects.The age, height and weight of the subjects ranged from 18 to 21 years, 175 to 178 centimetres and 60 to 70 kilograms respectively. All the selected subjects were randomly assigned into four groups of equal number at random. Each group consisted of fifteen (n=15) subjects each. Group-I, II, and III underwent combined aerobic and plyometric circuit training, aerobic training, and plyometric circuit training respectively. The group- IV acted as control group. Three experts rating method was utilised to assess the attacking performance of volleyball arch attackers. The data collected from the four groups prior to and post experimentation were statistically analyzed by means of analysis of covariance (ANCOVA). Since four groups were involved, whenever obtained 'F' ratio for adjusted post test means was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences. The experimental groups had significant improvement on arch attacking performance when compare to the control group. The combined training group significantly dominated the other two experimental groups. But, no significant in arch attacking performance was evident between aerobic and plyometric circuit training groups.

Key Words: Aerobic Training, Arch Attacker, Combined Training, Plyometric Circuit training,

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INTRODUCTION

Ball Games require ability including physical, technical, mental and tactical abilities comprehensively. Among them, physical abilities of players seem to exert noticeable effects on the skill of the players themselves and the tactics of the team. Therefore players must have optimum physical abilities to meet the demand of the sport. It is obvious that functional improvements are believed to have positive impact on volleyball skills performance. The ability of the neuromuscular system is another important factor to produce power is significant to the performance in sports that require direction changes, sprints, jumps and throws. More specifically, volleyball skills, such as attacking, blocking, digging, receiving, serving and setting, and the service require these functional abilities at top class. In volleyball, conditioning coaches of the assumption that increases in volleyball player´s jumping ability would enhance the percentage successful attack hit and blocking during matches. Additionally, a significant correlation is found between some functional measures and game performance of each specific volleyball position. For instance strength and bang for outside hitters. The attacking performance depends on development of strength, speed, and endurance at high level.

Explosive power is significant to optimal performance of volleyball players. The explosive power of arm and wrist are technically critical for Spike and serve. Arm power is a major key in increasing the velocity of the spike. Plyometric exercise is an effective training strategy to improve the explosive power of the upper arm. The vertical jumping efficiency is chiefly influenced by many factors, including the type and dose of exercise. Strength and conditioning programs of plyometric training seems to increase the vertical jump performance. It has been recognized that the combined effects of plyometric exercises and other types of reflex jump exercises such as countermovement jump, depth jump, one-step jump and squat jump are more effective for increasing vertical jump performance.

Plyometric is essential to athletes who jump, lift, or throw. Plyometric is a defined exercise to develop maximum strength and power in a short period of time. The most common type of plyometric training is natural jumping, such as a cone hops, depth jumps, jump rope, skipping drills and standing jumps.

. The research indicates that heavy weight lifting and plyometric is a suitable method of training to effectively improve power output. In plyometric, combination of the lengthening and shortening action of muscle is believed to takes place within hundredths of a second. In general, the elite high jumpers are on the ground merely for 0.12 seconds. In the plyometric terminology this is called as the amortization phase. It is the amount of time the foot is in contact with the ground after landing from jumping off a box and jumping on to subsequent box. The shorter the time on the ground, called amortization phase, the more explosive the muscle contraction and the greater gains in muscle strength. The strength and innate speed are important for explosive jump. The length of the amortization phase is mostly dependent on learning. Learning and motor skill training to strength base is the prime factor for improving explosive leg power.

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In circuit training, we can minimise and maximizes the total exercise volume includes number of sets, repetitions, and amount of weight completed in a period of time. The exercises are completed in a circuit, and therefore, the exercising time is condensed. A circuit training session can be modified to meet specific needs. It is a well-suited training for developing strength endurance and local muscular endurance. It is less suitable for building muscle bulk. When compare to weight training, Circuit training provides less result in the way of maximal strength development.

It is good to know how aerobic training influences adaptations in motor ability components and physiological parameters when selecting an optimum training schedule for a specific sport or for improving fitness of the people in the general community. The game of volleyball with a relay point system played for 25 points allows the game to last for quite a long time. The influence of cardiorespiratory capacity aids in maintaining performance throughout the game. Players with a top class cardiorespiratory capacity are able to maintain their performance which increases winning opportunity.

METHODOLOGY

Subjects and variable

The main purpose of the study was to elicit the effect of combined and isolated effect of plyometric circuit training and aerobic training on attacking performance of arch attackers. The purpose of the study was achieved with the active involvement of sixty (N=60) male volleyball players participated in inter district tournament of Chennai, Tamil Nadu. The age, height and weight of the subjects ranged from 18 to 21 years, 175 to 178 centimetres and 60 to 70 kilograms respectively.The attacking performance of arch attackers was evaluated by three experts rating method.

Experimental Protocol

The selected subjects were randomly assigned into four groups with equal number of subjects. Thereby, each group consisted of fifteen (n=15) volleyball players. The experimental group underwent combined training, plyometric circuit training and aerobic training. The control group was not given any treatment during the course of the study. The experimental groups I, II and III performed combined plyometric circuit and aerobic training, plyometric circuit training and aerobic training respectively on three alternate days in a week for a period of eight weeks only in morning session in between 6.30 am to 8.00 am under the personal supervision of the researchers. The experimental group II performed the following plyometric exercises in circuit. They were plyometric box Jump, plyometric Push- Ups, Burpee, mountain climber, hurdle jump, power drop, plyometric lateral step up, underhand medicine ball throw, and superman with medicine ball. The aerobic exercises selected for experimental group III were forward and backward stepping, V, T, L, Grape, V, intensity Jumps, Bouncing, Diamond, Leg curl, Squat, and Jump Jack. Every week the work out sequence was increased as per the principles of load progression.

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Experimental Design and Statistical Technique

Random sampling method was adopted for the selection of subjects. Randomized pre test post test control group design was adopted for this study. Thereby, the subjects (n=60) were divided at random in to four equal groups of fifteen each and randomly allocated to the experimental and control groups. All the groups were selected from the same population. No effort was made to equate the groups prior to the commencement of the experimental treatment. Pre and post test were conducted to treatment and control groups. The data collected from the four groups prior to and post experimentation on attacking performance were statistically analyzed by analysis of covariance (ANCOVA) to determine differences, if any among the adjusted Post test means on selected criterion variable. Since four groups were involved, when the obtained 'F' ratio for adjusted post test means was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences. The level of significant was fixed at 0.05.

RESULTS

Table No - 1

ANALYSIS OF COVARIANCE ON ARCH ATTACKING PERFORMANCE OF EXPERIMENTAL AND CONTROL GROUPS

	Combined Training	Plyometric Circuit Training	Aerobic Training	Control Group	SOV	Sum of Squares	df	Mean squares	'F' ratio
Pre test Mean	3.46	3.37	3.43	3.45	B	0.07	3	0.024	0.36
SD	0.27	0.24	0.24	0.25	W	3.60	56	0.064	
Post test Mean	8.08	6.92	6.84	3.47	B	177.80	3	59.26	230.55*
SD	0.47	0.58	0.62	0.25	W	14.39	56	0.25	
Adjusted Post test Mean	8.09	6.91	6.84	3.47	B	177.69	3	59.23	226.73*
					W	14.36	55	0.26	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 3 and 55 is 2.77 and degree of freedom 3 and 56 is 2.77)

*Significant at .05 level of confidence

The adjusted post test means on attacking performance of combined training, plyometric circuit training, aerobic training groups and control groups are 8.09, 6.91, 6.84

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and 3.47 respectively. The obtained 'F' ratio value of 266.73is greater than the required table value of 2.77 for the degrees of freedom 3 and 55 at 0.05 level of confidence. It is observed from this finding that significant difference exists among the adjusted post test means of experimental and control groups on arch attacking performance.

Since, the adjusted post test 'F' ratio value was found to be significant the Scheffe's test was applied as post hoc test to determine the paired mean differences, and it is presented in table no - 2.

Table No - 2

SCHEFFE'S TEST FOR DIFFERENCE BETWEEN THE ADJUSTED POST TEST PAIRED MEANS OF ATTACKING PERFORMANCE OF ARCH ATTACKERS

Adjusted Post Test Means				DM	CI
Combined training	**PlyometricCircuit Training**	**Aerobic Training**	**Control Group**		
8.09	6.91			1.18	0.37
8.09		6.84		1.25	0.37
8.09			3.47	4.62	0.37
	6.91	6.84		0.07	0.37
	6.91		3.47	3.44	0.37
		6.84	3.47	3.37	0.37

*significant

Table No -2 shows the Scheffe's test results that there are significant difference between the adjusted post tests means of combined training and plyometriccircuit training groups; combined training and aerobic training groups; combined training and control group; plyometriccircuit training and control group; aerobic training and control group on attacking performance. The result also showed insignificant difference between the adjusted post-tests means of plyometriccircuit training and aerobic training groups on attacking performance.

The pre, post and adjusted post test mean values on attacking performance of experimental and control groups are graphically represented in figure- I for better understanding.

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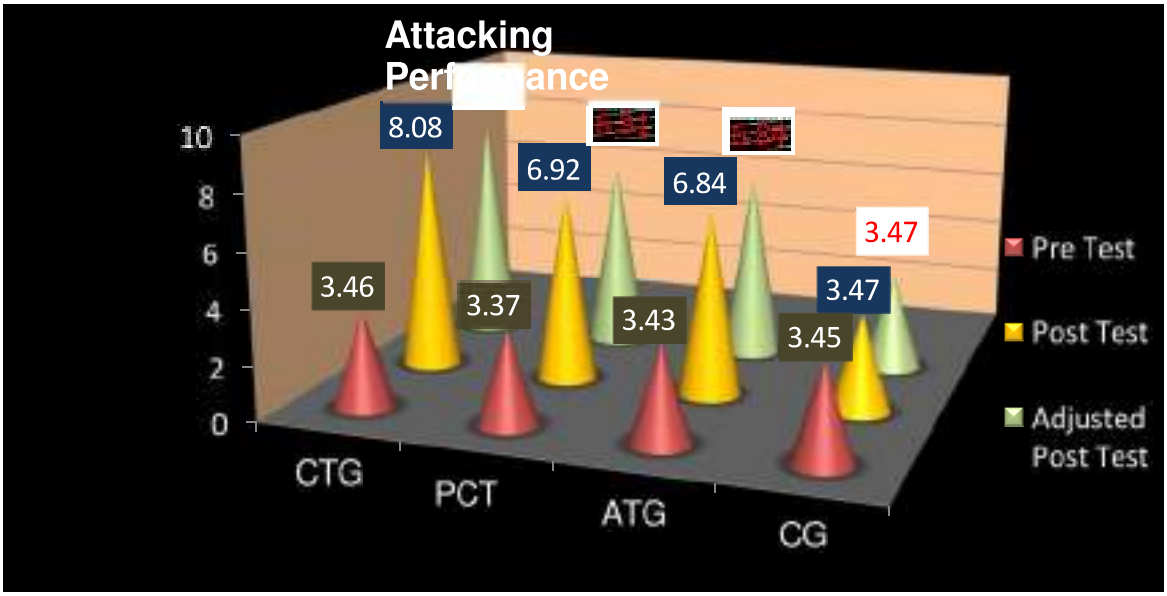
Figure – I

Diagram Showing the Pre Post and Adjusted Post Test Mean Values on Attacking Performance of Experimental and Control Groups



Discussion on findings

It has been evident from the results of the study that experimental groups improved their attacking performance. Combined training group excelled significantly than other experimental groups of plyometric circuit and aerobic training. But, no significant was found out between plyometric circuit and aerobic training groups. The study results are subject to the fact that though all efforts of treatment improved the performance of arch attackers, combined training is found to be superior to the isolated efforts. It is a matter of fact that the attacking efficiency of any arch attackers is highly correlated to the efficient motor fitness. Research findings proved that power and speed are equally important for a player to excl in attacking performance. The training that develops motor perception enables a player for higher performance. Reaction time and body coordination also adds additional support to better performance. Seeing the factors determining attacking performance, combined training can contribute much better than isolated training. Because the volleyball skill performance, in particular arch attacking, evaluated in this study require complex prerequisites. Isolated treatment might not be good enough to cultivate the ingredient essentials of arch attackers. Thereby combined training might be holistic for the attacking performance of arch attackers.

The findings of this study are in conformity with previously conducted studies. Antonio Paoli et.al. (2017) compare the effects of equal-volume resistance training performed with single-joint (SJ) or multi-joint exercises (MJ) on VO_2max, muscle strength and body composition in physically active males. They

came out with the conclusion that resistance training programs involving multi joint (MJ) exercises appear to be more efficient for improving muscle strength and maximal oxygen consumption than programs involving single joint (SJ) exercises, but no differences were found for body composition. Suman Kumar and Yokesh (2019) concluded that combined training brought better improvement to the performance variables of football players than the other isolated training.

CONCLUSION

The study of combined and isolated effect of plyometric circuit training and aerobic training on attacking performance of volleyball arch attackers has been concluded as under.

1. Experiential groups showed better arch attacking performance than control group.
2. The arch attackers of both playometric circuit training and aerobic training groups improved their performance but, both of the groups did not significantly differ from each other.
3. Finally, the combined training group statistically found to be significantly dominating the other two experimental groups of the study.

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SCRUTINIZATION OF MENTAL TOUGHNESS OF TEAM SPORTS AND INDIVIDUAL SPORTS PLAYERS

[1]SREYAMS S DHARAN & [2]MOULI M
[1]Reg no. 20224012601118 & [2]Reg no. 20224012601111
Department of Physical Education & Sports
Manonmaniam Sundaranar University, Tirunelveli -12
[1]sreyzzsd123@gmail.com & [2]moulimaheswaran@gmail.com

Abstract

The role and significance of psychology in athletics are well known facts, but at the moment, many researchers are interested in studying mental toughness in sports and competitions, mental toughness is regarded as one of the keys and deciding criteria. The goal of the current study was to evaluate and compare the levels of mental toughness in team and individual sports at inter collegiate level conducted by Manonmaniam Sundaranar University, 50 male team sport participants and an equal number of male individual sport participants were purposefully chosen for the study. Data were collected using a standardized questionnaire created by Tiwari (2007). The results showed that individual sports had poor levels of mental toughness. The results indicated that players from individual sports required orientation and training in mental toughness qualities.

Key words: mental toughness, individual sports, team sports.

Introduction

A player's or a team's mental toughness is what enables them to perform capably under any trying conditions. Positive traits and thoughts that aid the player and team in performing better both physically and mentally and raising the likelihood of winning a competition are sometimes referred to as such. Many times, a team's superior mental toughness over their rival squad was the key to victory. Continuous effort, self-control, confidence, success, present-focused Ness, stress management, and regulated cognition are the ingredients for mental toughness.

All the aforementioned elements show the player's or team's mental stamina and strength when participating in a game. Comparing a player with high mental toughness to one with low mental toughness, the player with average skill can win games in a row. So, we may conclude that mental toughness comes from regular practice and controlled bodily and mental response. Gould et al. (1987) claim that coaches understood the value of having a strong mental game to succeed in sports. Many academics, including Norris (1999), Gouls, Hodge, Peterson, and Petlichkoff (1987), Gould, Eklund, and Jackson (1993a), Williams (1998), and Gould, Dieffenbach, and Moffet (2002), have stressed the significance of mental toughness in the development of a champion athlet

Sports are an integrated kind of play that developed from human interaction and have been prevalent in civilization from the dawn of time. Nowadays, sports are an integral part of everyday life. Team sports and individual sports are two types of sports. A team sport is one

in which two or more players compete against one another, such as basketball, cricket, or hockey, whereas an individual sport is one in which only one player from each team competes, such as tennis, chess, boxing, or archery. Psychology is the study of the mind and human behaviour, and it is very useful in sports to comprehend players' conduct, including their anger, killing instinct, and mental toughness. These psychological factors can be used to create a team's cohesiveness and match temperament, which could lead to the desired outcome in sporting events.

"Psychology is the study of human behavior and mental processes from a scientific perspective. - **Michael W. Eysenck (2004)**. This definition emphasizes the scientific nature of psychology. Eysenck believes that psychology should use scientific methods to study human behaviour and mental processes.

Purpose of the study

The purpose of the study was to asses and compare the mental toughness level of team and individual sports players.

Selection of participants

Total Hundred players (N=100) were selected as subjects. The age of the subjects was ranging from 23-25 years. (n1=50) team sports players (n2=50) individual sports players who have participated in inter collegiate competition conducted by Manonmaniam Sundaranar university, Tirunelveli.

The purposive sampling technique was used for the collection of the data. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study.

Tool used

Selection of the tool Questionnaire on mental toughness developed by ‘Tiwari *(2007)*’ was selected to collect the data.

Statistical tool used

To determine whether there were any significant differences between the two groups, the independent 't' test was used. The level of significance for testing the hypotheses was fixed at 0.05.

Analysis and Interpretation of Data

The overall mental toughness level between team and individual sports players through mean value was computed below Table below.

Table

Mean and Standard deviation value of mental toughness between team and individual sports.

Group	N	Mean	S. D	T - Test

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Team sports	50	18.10	2.485	3.009
Individual sports	50	16.26	3.539	

**** Significant level 0.05 T < 1.984***

Table above shows that the mean values on mental toughness between team and individual sports players from inter collegiate level conducted by M.S University are 18.10 and 16.26. The calculated 't'-value 3.009 on mental toughness level of team and individual sports players is compared with the table value of 1.984

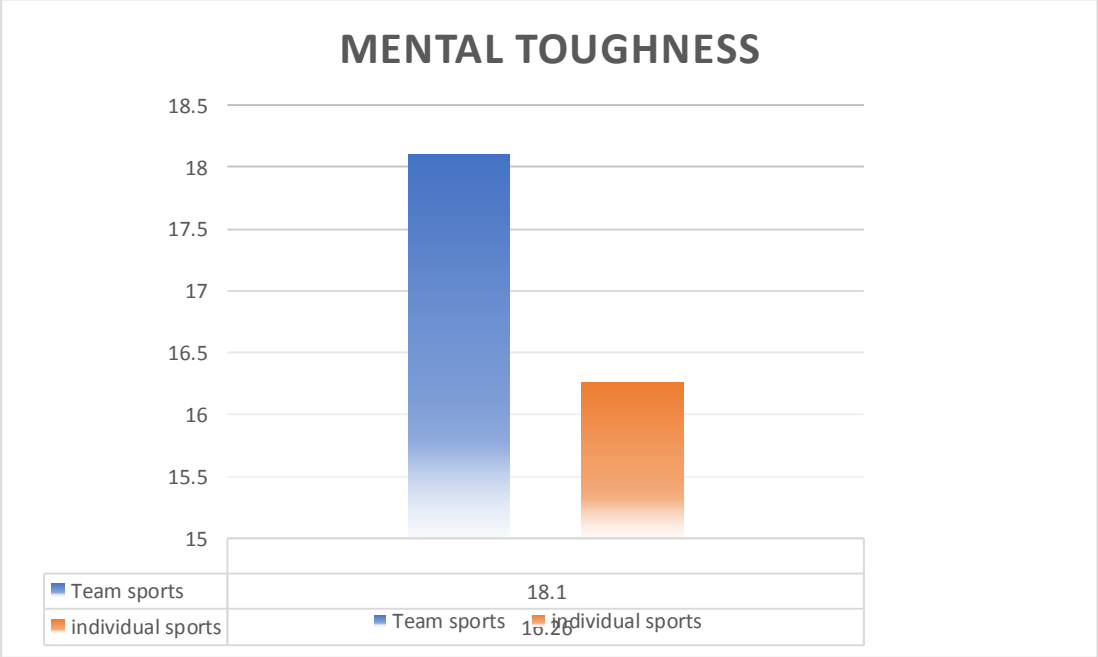

FIGURE: MEAN VALUE OF MENTAL TOUGHNESS BETWEEN TEAM AND INDIVIDUAL SPORTS PLAYERS

DISCUSSION ON FINDINGS

The result of the study indicates that there was a significant difference in mental toughness between team and individual sports players in inter-collegiate level of M.S University. The analyzed data indicates that calculated t-value 3.009 (t = 1.984, t > 0.05) is greater than tabulated t-value 3.009 required to be significant at 0.05 level.

Similar study conducted by Asif saif and Ashwani Saini (2016) findings also supports that significant difference found in mental toughness between team and individual sports players.

Conclusions

On the basis of findings of the study following conclusions have been made –

There was significant difference found between team and individual sports players participated in, inter-collegiate competition conducted by M.S University, Tirunelveli. Comparing individual sports players with team sports players, the Team sports players were superior from the Individual sports players in overall mental toughness.

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EMOTIONAL INTELLIGENCE BETWEEN LAW AND PHYSICAL EDUCATION PROFESSIONAL – AN ANALYSIS

Dr. P.Thangaraj
Assistant Professor, Department of Physical Education and Sports
Manonmaniam Sundaranar University, Abhisekapatti, Tirunelveli-12, Tamil Nadu, India.
sportstkeerthana@gmail.com
Dr. P.Srinivasan
Director of Physical Education
Holy Trinity Public School, Kovilpatti, Thoothukudi, Tamil Nadu, India.
kpshockey76@gmail.com
M. Rajakumar & P. Murugesan
Department of Physical Education and Sports
Manonmaniam Sundaranar University, Abhisekapatti, Tirunelveli-12, Tamil Nadu, India.
sivanthirajapandian@gmail.com

Abstract

Emotional- Intelligence is key role for every leader working in the prevalent work settings in the era of technological revolution. The main research question was Emotional Intelligence Questionnaire invented by Emily & Sterrett (2000). The study was restricted to find out the category of emotional intelligence variables namely, self-awareness and self-management. This study attempts to broaden the knowledge base of Human Resource Development through the investigation of emotional intelligence. The selected subjects were purposely divided into two equal groups according to their respective nature of work such as Group-I was Law Professionals (n=100) and Group-II was Physical Education Professionals (n=100). The age of the players were ranged from 38 to 42 years only. There was a significance difference between law and physical education professionals. Hence the law professional's those who are works as advocates had better performance on self-awareness and self-management variables than the physical education professional's.

Keywords: advocates, Physical Education professional, self-awareness and social-awareness.

Introduction

Emotional intelligence refers to the ability of individuals to recognize, understand, and manage their own emotions as well as the emotions of others. It encompasses a range of skills, including self-awareness, self-management, social awareness, and communication management. Emotional intelligence is an important factor that contributes to success in various aspects of life, including professional settings. Individuals with high emotional intelligence are better equipped to navigate interpersonal relationships, handle stress and pressure, and make sound decisions. Emotional Intelligence in the Workplace Emotional intelligence plays a crucial role in the workplace, regardless of the profession. Professionals in fields such as law and physical

education can benefit greatly from developing and utilizing emotional intelligence skills (Goleman's 1995).

In the legal profession, emotional intelligence is essential for effective communication and relationship-building with clients, colleagues, and opposing parties. Lawyers with high emotional intelligence are more likely to understand and empathize with their clients, allowing them to provide the best possible representation. In addition, emotional intelligence can help lawyers effectively manage conflict and negotiate agreements, as they can understand and respond to the emotions and perspectives of others.

In the field of physical education, emotional intelligence is also highly relevant. Physical education professionals interact with students daily, and their ability to understand and manage emotions can greatly impact their effectiveness as educators. Physical education professionals with high emotional intelligence are better able to create a positive and supportive learning environment, understand the individual needs and motivations of students, and effectively address any behavioral or emotional challenges that may arise.

The relationship between emotional intelligence and success in the fields of law and physical education is evident. Individuals with high emotional intelligence in these professions are more likely to excel and achieve professional success. For instance, in the legal profession, lawyers who possess high emotional intelligence are more adept at building strong relationships with clients and colleagues. They can effectively communicate, understand and address the emotions of others, and navigate difficult situations with empathy and poise.

Many children will learn fundamental movement skills such as running, jumping, rolling, throwing and catching without the need for a structured physical education lesson. What the role of a physical education teacher can provide, however, is the opportunity to practice and fine tune these skills to open more avenues of sporting success for children later in life. There are also skills such as balance, flexibility, coordination and control that are useful in sports such as gymnastics, dance and yoga. You might find that some children enjoy these creative sports more than those with technical elements, such as major sports and games, but part of the role of a physical education teacher is to promote the importance of exercise to children regardless of their performance.

Another important feature of physical education lessons is the emphasis on teamwork and competition. Physical Education teachers can help children learn all about effective teamwork and the process of competing in various sports and games. It's important for children to understand fair play and for them to get used to both winning and losing. Values like fair play and not being a sore loser are key parts of a child's development, and physical education teachers can help them work on this through their lessons, giving them an opportunity to highlight their mistakes or weaknesses and improve upon them next time.

Aside from helping children develop their sports skills and physical fitness, physical education teachers also have a responsibility to make sure pupils are aware of the importance of

living a healthy and active lifestyle. This entails education all about physical fitness, the many ways we can incorporate physical activity into our lives, and the importance of a healthy diet.

Statement of the Problem

The objective of this study is to empirically investigate the analysis of emotional intelligence between law and physical education professionals.

Objectives of the Study

1. To determine self-awareness between law and physical education professionals.
2. To determine self-management between law and physical education professionals.
3. To determine social-awareness between law and physical education professionals.
4. To determine relationship-management between law and physical education professionals.

Methodology

The purpose of the present study was to find out the comparison of emotional intelligence among law and physical education professionals. To achieve the purpose, I chosen simple random sampling technique to select law & physical education (Each hundred) those who are working as advocates, physical education teacher and physical directors for last ten years of experience would be selected for this study from Thoothukudi and Tirunelveli district Tamilnadu India. The total two hundred subjects were works in a private sector (private advocates and private school or college teachers). The selected subjects were purposely divided into two equal groups according to their respective nature of work such as Group-I was Law Professionals (n=100) and Group-II was Physical Education Professionals (n=100). The age of the players were ranged from 38 to 42 years only. The study was restricted to find out the emotional intelligence variables namely, self-awareness and social awareness. The selected variables were tested with the standardized questionnaire such as emotional intelligence questionnaire which was invented by Emily & Sterrett in the year of 2000. The collected data was statistically analysed by using independent-'t' test. In this cases 0.05 level of significance was used to test the hypothesis.

Analysis and Interpretation of the Data

The independent-'t' test on the obtained for self-awareness between team sport and individual sport players have been analyzed and presented in the table 1.

Table 1

Summary of Mean Values and Independent-'T' Test for Law Professionals and Physical Education Professionals on Self-Awareness (Points)

Groups	Number	Mean	Standard Deviation	't' ratio
Law Professionals	100	17.99	2.12	4.05*
Physical Education Professionals	100	16.31	3.56	

(Table value required for significance at 0.05 level for't' test with df 198 is 1.65).

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From the table 1 it shows that the mean values of law professionals and physical education professionals were 17.99 and 16.31 respectively. The obtained-'t' value is 4.05 which is greater than the required table of 1.65 with df 198 at 0.05 level of significance. It was concluded that there was significance difference between law professionals and physical education professionals on self-awareness.

The mean values of self-awareness between law professionals and physical education professionals are graphically represented in the figure 1.

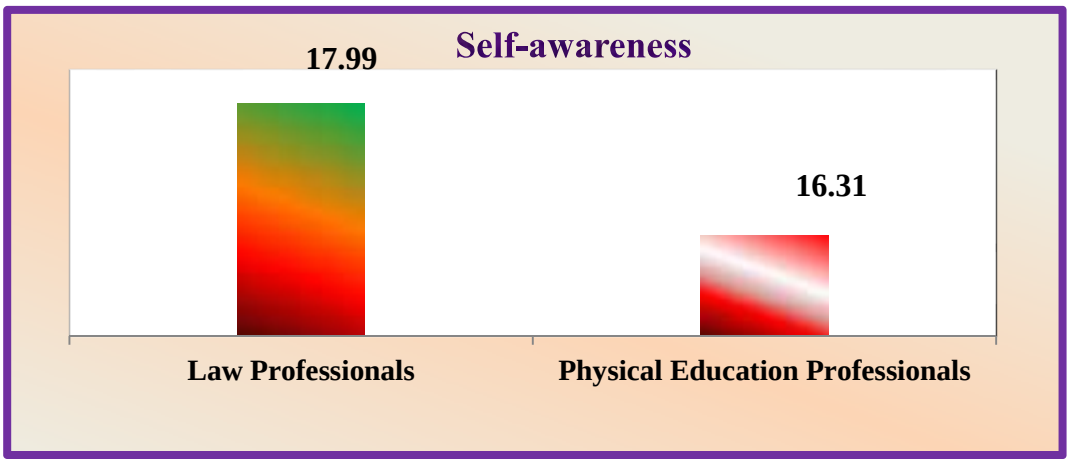

Figure 1: Mean values of self-awareness between law professionals and physical education professionals.

Social-awareness

The independent-'t' test on the obtained for social-awareness between for law professionals and physical education professionals have been analysed and presented in the table 2

Table 2

Summary of Mean Values and Independent-'T' Test for Law Professionals and Physical Education Professionals on Social-awareness

Groups	Number	Mean	Standard Deviation	't' ratio
Law Professionals	100	18.69	4.54	1.86*
Physical Education Professionals	100	17.45	4.87	

(Table value required for significance at 0.05 level for't' test with df 198 is 1.65).

From the table 2 shows that the mean values of law professionals and physical education professionals were 18.69 and 17.45 respectively. The obtained-'t' value is 1.86 which

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is greater than the required table of 1.65 with df 198 at 0.05 level of significance. It was concluded that there was significance difference between law professionals and physical education professionals on social-awareness. The mean values of social-awareness between law professionals and physical education professionals are graphically represented in the figure 2.

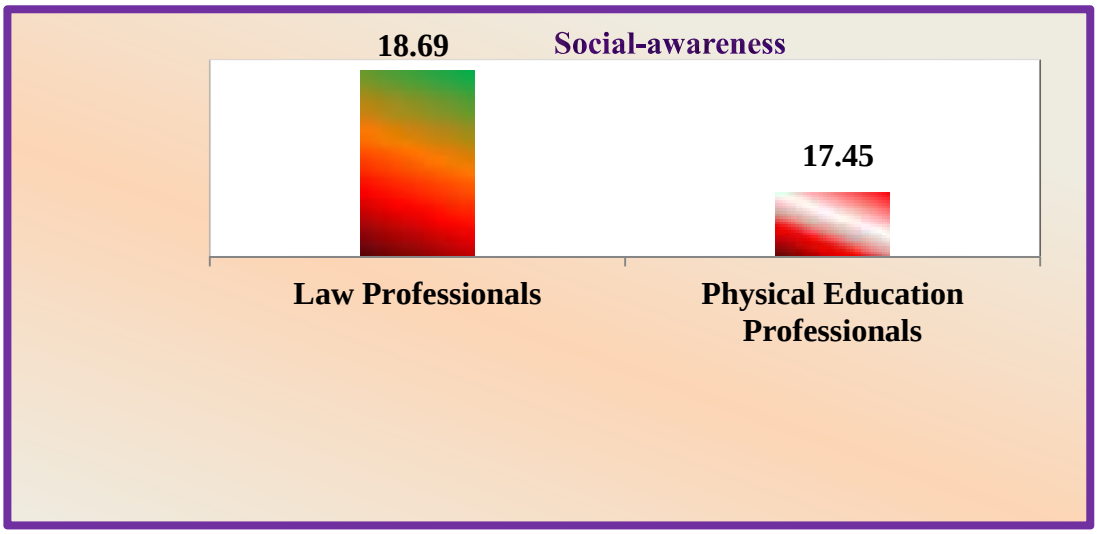

Figure: 2 Mean values of social-awareness between law professionals and physical education professionals.

Discussion of Findings

The results of the study indicated that there was significant difference on emotional intelligence such as self-awareness and social-awareness between law and physical education professionals. The law professionals which were advocates had better performance on self-awareness and social-awareness than the physical education professionals.

Chauhan, (2016) analysed the emotions are internal events that coordinate many psychological subsystems including physiological responses, cognitions and conscious awareness. Emotional intelligence is considered as a supportive factor against work pressures. This Paper examines how Emotional Intelligence (EQ) associates with Performance of lawyers in Rajasthan.

Douglas, (2015) evaluated the theoretical model for Thinking like a lawyer" is traditionally associated with rational-analytical problem solving and an adversarial approach to conflict. Goleman's model is adapted and applied to clinical legal education as an optimal site for introducing law students to EI.

James, (2008) analysed the major causes of stress and dissatisfaction among lawyers with measures of lawyers' mental wellbeing, emotional intelligence and the type of legal education and practical legal training they had received are correlated. Understanding the causes of dissatisfaction will not only help the lawyers but also their employers, courts, clients and the general community.

Bechter, Whipp, Dimmock & Jackson, (2021) analysed the teachers intrinsic motivation for their work supports a host of adaptive outcomes for teachers and students. These findings contribute to our knowledge about emotional intelligence among high school teachers, and may

provide practical insight into potential strategies—grounded in emotional intelligence frameworks—for supporting teachers' relationship-specific need satisfaction and motivation at work.

Conclusions

From the results obtained, the following conclusions were drawn,

1. There was a significant difference existed between law and physical education professionals on self-awareness.
2. There was a significant difference existed between law and physical education professionals on social-awareness.
3. The law professional's subject which means those who are works as advocates had better performance on self-awareness and social awareness variables than the physical education professional's subjects.

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Study of Infrastructural Set-up and General Sports Facilities in Higher Educational Institutions (HEI's) of Haryana

Dr. Mastram
Mastram366@gmail.com
Assistant Professor in Physical Education
Pt. Neki Ram Sharma Govt. College, Rohtak

Abstract

The purpose of the study was to explore the infrastructural setup and general Sports Facilities in Higher Educational Institutions (HEI's) of Haryana. 7State Universities and 70 Govt. Colleges were selected as sample of study. In the study both type of data primary and secondary data have been used. For analyzing, the collected information descriptive statistical tools like frequency and percentage analysis were used. Results of the study showed that 60 percent of the colleges havevolleyball, 53% haveBadminton, 43% have table Tennis and 39% have cricket ground. Whereas all Universities have400 meter athletic track. 86% Universities have play grounds for Kabbaddi, Basketball, Handball followed by Volleyball (71 %), Gym (71%) Table Tennis, Cricket, Yoga, Football and Kho Kho (57 %). Only two sampled Universities are having Swimming Pools and Shooting Range. Only one sampled University of the State is having Synthetic track. Only two universities are providing separate playgrounds for wrestling. Only three universities have separate Gymnasium Hall (Multipurpose hall). It was noticed that more than 50% of the colleges do not have sufficient staff of physical education. While on the issue of physical education as an elective subject in graduation courses, it has been observed that 62.9% of the colleges do not offer this to the students.

Key Words: infrastructural setup, Facilities, Sports

Introduction

"Sport is probably the most effective means of communication in the modern world. It cuts across all cultural and language barriers to reach out directly to billions of people worldwide"(Nelson Mandela).Infrastructure which is considered to be the strongest pillar of sports has been defined as "the primary physical and organizational construction needed to facilitate sport participation. From a functional point of view sports infrastructure enables community members to participate in sports" (Tandfonline.com).There is no denying the fact that robust infrastructure has a tremendous impact on, not only the development of a sport ecosystem but also the community and economy at large. It is also true that infrastructure largely determines the state of sports in that country. The study (SPLISS) on 2006 sports policy underlines the crucial role infrastructure plays "both directly and indirectly, on participation in sports, training facilities, and international competition." Several other studies have also highlighted that "the organization of international events in a particular country has a positive

effect on the international success of its athletes. (2006 SPLISS) Thus, it can be safely assumed that proper infrastructural support has a positive impact on the development of sports. That is why nations like China, Australia and the USA have invested a lot in infrastructures. For example China started investing heavily in sports infrastructure in 1995 as part of its National Fitness Program. The importance of sports facilities cannot be denied as the desired standard which is achieved only through adequate infrastructural facilities and proper administration. In order to fully realize the potentials of the youth, they have to be exposed to adequate playing facilities. Apart from this, it also brings people of different communities, social and religious groups together and tries to establish communal harmony among them by holding large tournaments using these sports facilities.Certainly role of educational institutions is predominant for the growth of the sports as per the modern sports culture. There are numerous programs and schemes provided by higher educational institutions of the state as they deal with the youth for their sports along with their academic career. Infrastructure, sport programs and schemes empower the youth of every society and provide the ground for the development of sport culture among the people.

Objective of the study

The objective of the study was to study infrastructural set-up of sports and general sports facilities in Higher Educational Institutions (HEI's) of Haryana.

Methodology

The study was descriptive in nature.7State Universities and 70 Govt. Colleges were selected as sample of study. In the study both type of data,primary and secondary data have been used. For collecting the secondary information, published documents, reports and bulletin of the various universities, directorate of higher education and Haryana government were assessed. For collecting the primary data questionnaire was constructed and administered. For analyzing, the collected information descriptive statistical tools like number and percentage were used.

Results and discussion

Table 1: Infrastructural Facilities in Colleges of Haryana

		Responses		Percent of Cases
		N	Percent	
	Athletic Track 400	18	6.7%	31.6%
	Athletic Track 200	15	5.6%	26.3%
	Table Tennis	24	9.0%	42.1%
	Judo	2	0.7%	3.5%
	Badminton	30	11.2%	52.6%
	Cricket	22	8.2%	38.6%
	Yoga	2	0.7%	3.5%

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	Gymnasium	8	3.0%	14.0%
	Volley Ball	35	13.1%	61.4%
	Gym	18	6.7%	31.6%
	Kabbadi	18	6.7%	31.6%
	Power Lifting	1	0.4%	1.8%
	Football	11	4.1%	19.3%
	Net Ball	4	1.5%	7.0%
	Basketball	18	6.7%	31.6%
	Handball	6	2.2%	10.5%
	Kho Kho	14	5.2%	24.6%
	Baseball	2	0.7%	3.5%
	Hockey	4	1.5%	7.0%
	Lawn Tennis	3	1.1%	5.3%
	Chess	9	3.4%	15.8%
	Boxing Ring	4	1.5%	7.0%
Total		268	100.0%	470.2%

From table 1, it has been found that (60%) of the colleges are having the playgrounds for the volleyball games. More than half of the surveyed colleges have badminton courts. Further as per table 1, only few colleges have sports playfields for the games of Judo, Yoga, Power Lifting and Boxing ring. Only 14 percent colleges have separate gymnasium halls, which is quite necessary as far as indoor games are concerned. It is also observed that the colleges do not have wrestling mats for the players which is definitely the basic requirement as far as the present scenario of the university games is concerned.

Table 2: Infrastructural facilities in State Universities of Haryana

		Responses		Percent of Cases
		N	Percent	
	Athletic Track 400	7	7.2%	100.0%
	Athletic Track 200	1	1.0%	14.3%
	Table Tennis	4	4.1%	57.1%
	Judo	3	3.1%	42.9%
	Badminton	4	4.1%	57.1%
	Cricket	4	4.1%	57.1%
	Yoga	4	4.1%	57.1%
	Gymnasium	3	3.1%	42.9%
	Volley Ball	5	5.2%	71.4%
	Gym	5	5.2%	71.4%
	Kabbadi	6	6.2%	85.7%
	Power Lifting	2	2.1%	28.6%

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	Football	4	4.1%	57.1%
	Net Ball	3	3.1%	42.9%
	Basketball	6	6.2%	85.7%
	Handball	6	6.2%	85.7%
	Kho Kho	4	4.1%	57.1%
	Baseball	2	2.1%	28.6%
	Hockey	2	2.1%	28.6%
	Lawn Tennis	3	3.1%	42.9%
	Chess	3	3.1%	42.9%
	Boxing Ring	3	3.1%	42.9%
	Squas Court	3	3.1%	42.9%
	Gymnastics	3	3.1%	42.9%
	Swimming Pool	2	2.1%	28.6%
	Shooting Range	2	2.1%	28.6%
	Wrestling	2	2.1%	28.6%
	Synthetic Track	1	1.0%	14.3%
	Total	**97**	**100.0%**	**1385.7%**

It is clear from table 2, that all universities have 400 meter athletics tracks. Six Universities have playgrounds for kabaddi, basketball and handball and five universities have playgrounds for volleyball, gyms and four have the playing facility for table-tennis, cricket, yoga, football and kho-kho. Only two universities have shooting range and swimming pools and only one synthetic track. These universities i.e Maharshi Dayanand University, Rohtak, Kurukshetra University, Kurukshetra and Chaudhary Devi Lal University, Sirsa have Sports Complexes with separate multipurpose halls. In case of colleges, there is need to improve sports infrastructure faciliites so that they can attract the youth for sports. The inadequacy of sports equipments and other facilities clearly affects the sports skills resulting into less participation in sports tournaments.

Table 3: General sports facilities in colleges of Haryana

Sr. No	**Statements**	**Yes**		**No**	
1	Availability of Separate Washroom/Changing Room for				
		F	**%**	**F**	**%**
	Coaches	29	41.4	41	58.6
	Boys	45	64.3	25	35.7
	Girls	38	54.3	32	45.7
2	Availability of Physical Education Teacher	33	47.1	37	52.9

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3	Running Courses of Physical Education in the Colleges				
	B.P.Ed.	1	1.4	69	98.6
	M.P.Ed.	Nil	Nil	Nil	Nil
	B.Sc. Sports	Nil	Nil	Nil	Nil
	PG Diploma & Yoga	Nil	Nil	Nil	Nil
	Masters in Yoga	Nil	Nil	Nil	Nil
4	Physical Education offered as subject in graduation colleges	26	37.1	44	62.9
5	Does the colleges have sports council	57	81.4	13	18.6

Table 3, shows that (58%) coaches, (35%) boys and (45%) girls do not have separate washroom/changing room. Half of the posts of physical education teachers in colleges are lying vacant. It is disheartening to find that only one college runs the B.P.Ed programme. None of the colleges runs the programs of M.P.Ed, B.Sc Sports, P.G. Diploma in Yoga, Masters in Yoga. Physical education is not offered as a subject in 63% of the colleges. Most of the colleges have sports councils/ boards.

Table 4: General Sports facilities in Universities of Haryana

Sr. No	Statements	Yes		No	
1	Availability of Separate Washroom/Changing Room for				
		F	**%**	**F**	**%**
	Coaches	7	100		
	Boys	7	100		
	Girls	7	100		
2	Availability of Physical Education Teacher	7	100		
3	Running Courses of Physical Education in the Colleges				
	B.P.Ed.	2	28.6	5	71.4
	M.P.Ed.	5	71.4	2	28.6
	B.Sc. Sports	1	14.8	6	85.7
	PG Diploma & Yoga	2	28.6	5	71.4
	Masters in Yoga	4	57.1	3	42.9
4	Does the colleges have sports council	7	100		

In case of general sports facilities in the universities of Haryana it has been observed from table 4 that there is 100% availability for coaches, boys and girls for separate washroom/ changing room and the availability of physical education teacher is again 100%. In case of offering different courses only two Universities have B.P.Ed and P.G Diploma of yoga, five have

M.P.Ed courses, four have Masters in Yoga whereas B.Sc sports is offered only in one university. All universities have Sports Councils.

Conclusion

It is observed that in universities, the infrastructural facilities are found to be at satisfactory level as compared to colleges. Thus, the infrastructure setups of universities are better than the colleges. It is also found that the availability and utilization of general sports facilities in universities are at satisfactory level while in colleges some of the facilities are lacking.

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COMPARITIVE ANALYSIS OF BMI BETWEEN EATING DISORDER AND PHYSICAL ACTIVITY AMONG WOMEN STUDENTS

Dr. C. Durai
Assistant Professor, Department of Physical Education and Sports,
Manonmaniam Sundaranar University, Abisekapatti, Tirunelveli, Tamil Nadu, India.
drcd@msuniv.ac.in
B. Arunachalam
Research Scholar, Department of Physical Education and Sports,
Manonmaniam Sundaranar University, Abisekapatti, Tirunelveli, Tamil Nadu, India.
arunachalam249@gmail.com
Dr. G. Anantharaj
Assistant Professor and Head, Department of Physical Education, Kamaraj College,
Thoothukudi, Tamilnadu, India.
ananthphs@gmail.com

Abstract

The purpose of this study was to discover the important variations in eating disorders and physical activity among female students. For this study, subjects were chosen at random from Manonmaniam Sundaranar University's women hostel and their age ranged between 18 to 24 years. Physical activity and eating disorders were hypothesized to have no significant differences. For dependent variables, the significance of group differences was determined using the t-test. The significance threshold was set at p.05. Among the Hostel women students, there was a significant variation between groups. When the various criteria are applied to different groups of participants, the findings vary in type and extent, but they are equivalent in terms of eating disorders and physical activity.
***Key words**: eating disorder, physical activity and BMI*

Introduction

A woman is an adult female human. Prior to adulthood, a female human is referred to as a girl (a female child or adolescent). The plural women is sometimes used in certain phrases such as "women's rights" to denote female humans regardless of age. Typically, women have two x chromosomes and are capable of pregnancy and giving birth from puberty until menopause. Female anatomy is distinguished from male anatomy by the female reproductive system, which includes the ovaries, fallopian tubes, uterus, vagina, and vulva. The adult female pelvis is wider, the hips broader, and the breasts larger than that of adult males. Women have significantly less facial and other body hair, have a higher body fat composition, and are on average shorter and less muscular than men.

A women's college allows for many benefits. Besides being academically challenging, small class sizes leave open the opportunity for individualized faculty attention and mentorship, while a welcoming, inclusive community of like-minded souls creates a network of lifelong friendships and support. Living in a hostel will teach you many other things like teamwork, helping your roommates, a sense of unity and adjustment etc. In a hostel, a student tends to acquire many good qualities from roommates and other hostellers,

and at the same time, they are also vulnerable to the evil influence of the others.

Physical Activity is defined as any body movement produced by skeletal muscles that result in a considerable increase over the resting energy expenditure (Taras, 2005). It refers to the movement of large muscle groups, as when moving the whole body. It can also be defined as any movement between skeletal muscles that exerts energy. Physical activity is categorized as low, moderate, vigorous and strength training activities and must be uninterrupted for at least 20 minutes (Striegel 2007).

Food and nutrition must be appropriate to the biological and social aspects of people and to comply with food needs, considering culture, race, gender, ethnicity, financial condition, social and cultural dimensions of the act of eating (Costa et al., 2018). Eating Disorder can be defined as a moderate to extreme disturbance in eating behavior characterized by an obsession with food and body weight (Tiggemann, 2001). This term refers to one of three clinically diagnosed conditions: anorexia nervosa, bulimia nervosa, or eating disorders not otherwise specified (EDNOS) (Beals, 2004). The central features of eating disorders are severe body image disturbances, overcontrol or under control of eating, and extreme behaviors to control weight (Beals, 2004; Streigel-Moore and Bulik, 2007). Alvarenga et al. (2010) defined Eating Attitudes as one's beliefs, thoughts, feelings, behaviors and relationships with food and many studies in this area of knowledge also use the term attitude to describe thoughts, feelings and beliefs regarding eating. Because what one eat is also decided by their thinking, feelings to eat, their culture.

Three risk factors are thought to particularly contribute to a female athlete's vulnerability to developing an eating disorder: social influences emphasizing thinness, performance anxiety, and negative self-appraisal of athletic achievement. A fourth factor is identity solely based on participation in athletics.

Statement of the Problem

The purpose of the study was to compare BMI with Eating Disorder and Physical Activity among women students staying in hostel.

Research questions

In this study, the following research questions were used to reveal the BMI introversion on Eating Disorder and Physical Activity, among students staying in women hostel of Manonmaniam Sundaranar University.

1. Is there any relationship between BMI and Eating Disorder among students staying in women hostel?
2. Is there any relationship between BMI and Physical Activity among students staying in women hostel?

Objectives of the Study

Many research studies were conducted on eating attitudes and physical activity in the field of Physical Education and Sports. Very few studies were conducted on women students staying in hostel. Hence the researcher made an attempt to compare BMI with physical activity and eating disorder among students staying in women hostel.

Methodology

To achieve the purpose of the study 100 women student of various departments, staying in women hostel of Manonmaniam Sundaranar University., Tirunelveli, Tamilnadu,

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India between the age group of 18-24 were selected as subjects. Eating attitude and Physical activity test were selected as a variables. All the subjects were informed about the nature of the study and their consent was obtained to co-operate. The collected data were statistically analyzed for significant difference using ANOVA test. In these cases, 0.05 level of significance fixed to test hypothesis.

Tool used

S.No	VARIABLE	TEST	Author
1	Eating Disorder	EAT-26	Garner (1982)
2	Physical Activity	IPAQ(2002)	Craig (2005)

Analysis and Interpretation of Data

The Eating Disorder and Physical Activity Questionnaire was used to collect the data for Women Hostel students from Manonmaniam Sundaranar University Tamilnadu was computed below Table 1 & 2.

Table I

Mean & Standard Deviation Value of BMI among Women Students

S.NO	BMI	N	MEAN	SD
1	UW	22	13.54	5.47
2	NW	61	13.60	6.38
3	OW	17	30.45	4.49
Total		100	16.46	8.65

The table shows that the independent T Test data of body mass index of the college students in women's hostel is presented in table 1 and fig.1 The Mean Under weight of college students in women's hostel was reported 13.54 and the Standard deviation was 5.47 .The Mean Normal weight of the college students in women's hostel was 13.60 with the Standard deviation of6.38. The Mean over weight of the college students in women's hostel was observed to be 30.45 with a Standard deviation of 4.49.

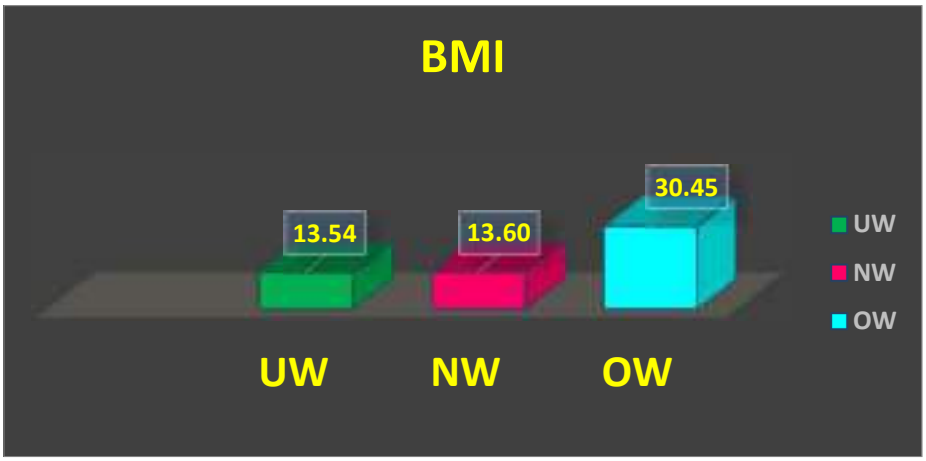

Figure I: Mean Value of BMI among Women Hostel Students

TABLE II

Pearson Correlation Value of Eating Disorder among Women Hostel Students

Independent variable	Mean	Standard deviation	Pearson value
Eating Disorder	16.46	8.65	.563
BMI	1.95	.63	

The depended 'T' test statistics regarding the eating attitude of the college students in women's hostel are presented in table II and fig. II. The Mean score of eating attitude to the women hostel students in was 16.46. With a standard deviation of the value 8.65. The Mean value of eating disorder college students in women's hostel BMI was 1.95. The Standard deviation value of .63.

The Pearson product moment value between the BMI and Eating disorder among women's hostel students is .563, which was greater than the tabulated value at 0.178 level of confidence. Therefore, it was concluded that there was significant relationship between BMI and Eating disorder to the college students in women's hostel.

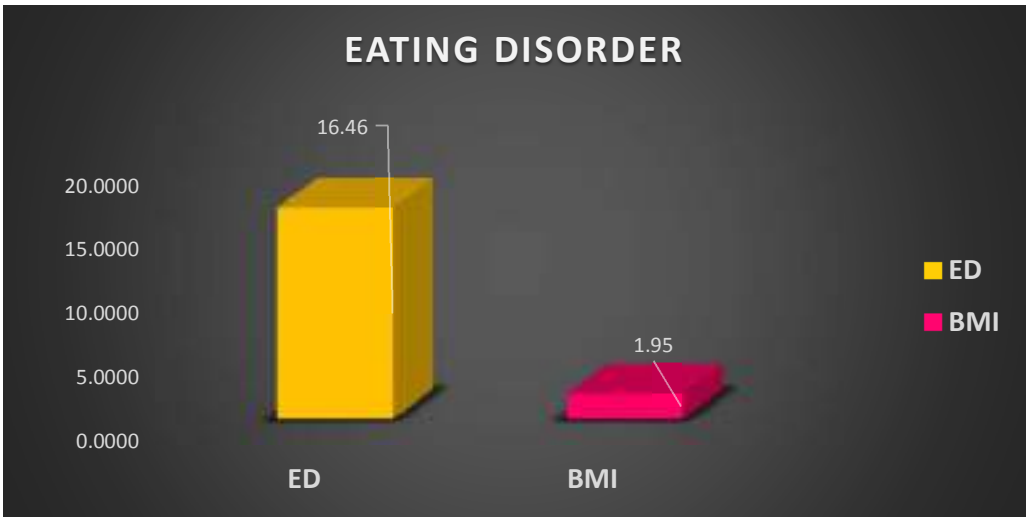

Figure- II Mean Value of Eating Disorder among Women Hostel Students

Table III

Mean and Standard Deviation of Physical Activity among Women Hostel Students

Independent variable	Mean	Standard deviation	Pearson value
Physical activity	3483.19	4187.40	.128
BMI	1.95	.63	

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The independent T test statistics regarding the Physical activity of the college students in women's hostel are presented in table III and fig. III. The Mean score of to the women college students in hostel was 3483.19. With a standard deviation of the value 4187.40. The Mean value of Physical activity college students in women's hostel BMI was 1.95. The Standard deviation value of .63.

The Pearson product moment value between the BMI and Physical activity women college students in hostel is .128, which was greater than the tabulated 'r' value at 0.178 level of confidence. Therefore, it was concluded that there was significant relationship between BMI and Physical activity to the college students in women hostel.

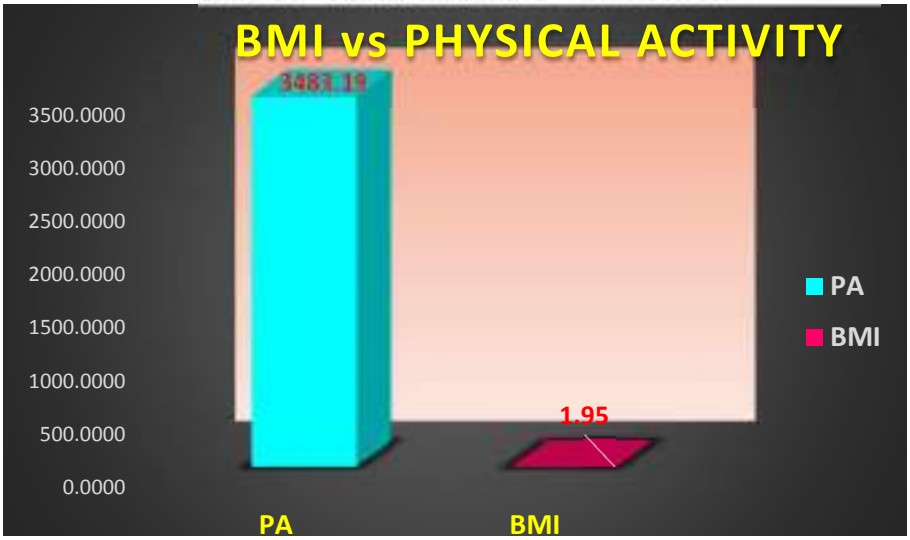

Figure III: Mean Value of Physical Activity among Women Hostel Students

Discussion on findings

The objective of this study was to evaluate the status of physical activity levels, eating attitude, self-esteem and body composition of female college hostel students. There was significant relationship between physical activity levels with the eating attitude, between Women hostel students were also ascertained.

In first hypothesis it was hypothesized that there would be a significant relationship between women hostel students BMI and Eating disorder. The results of the study produced significant relationship between eating disorder and BMI. Hence, the researcher's first hypothesis was accepted.

In Second hypothesis, it was hypothesized that there would be a significant relationship between women college students BMI and Physical activity. The results of the study produced significant relationship between Physical activity and BMI. Hence, the researcher's Second hypothesis was accepted.

Conclusions

On the basis of findings of the study following conclusions have been made –

It is concluded that normal eating disorder mean value 16.46 eating habits were found to students staying in women's hostel normal eating habits were reported to have disordered eating habits.

It is concluded that normal physical activity mean value 3483.19 physical activity level were found students staying in women's hostel normal physical activity level were reported to have physical activity.

RECOMMENDATIONS

1. Physical activity may be incorporated by the college managements to enhance physical and psychological wellbeing among college teachers and students.
2. It also recommended that awareness may be created among the teachers and students in the educational institutions as well as among other general populations regarding the positive benefits of participation in regular physical activity.
3. An individual should participate at least 150 minutes per week in physical activities as recommended by WHO.

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ANALYSIS OF ENTREPRENEURSHIP ATTITUDE AMONG COLLEGE STUDENTS

S. Mariappan
Ph.D Scholar (FT) Reg.No: 21114012121021
Department of Physical Education and Sports,
Manonmaniam Sundaranar University, Abisekapatti, Tirunelveli, Tamil Nadu, India.
smarilc112@gmail.com
Dr. C. Durai
Assistant Professor, Department of Physical Education and Sports,
Manonmaniam Sundaranar University, Abisekapatti, Tirunelveli, Tamil Nadu, India.
drcd@msuniv.ac.in
Dr. S.ATHISAYARAJ
Assistant Professor, Department of Physical Education, St. Xavier's College (Autonomous) - Tirunelveli, Tamilnadu, India.
athisayaraj.raj@gmail.com

Abstract

In the modern world, entrepreneurship has emerged as a critical engine of economic development, innovation, and job creation. In recent years, there has been an increasing interest in understanding University students' views and tendencies towards entrepreneurship. Entrepreneurship interest arises from the realization that colplege is a critical stage in a student's life, where attitudes and views are formed and career trajectories are typically established. The research paper concerns the study of MBA, MCA and M.P.Ed students' entrepreneurship attitude. The survey was conducted among 150 students' (MBA, MCA and M.P.Ed) from Manonmaniam Sundaranar University, Tamilnadu, India. Between the age group of 21 to 25 years. Entrepreneurial self-assessment Questionnaire developed by M.Inmaculada lopez nuenez, (2022) was used to collect the data. The result concludes that there was a significant difference exist on entrepreneurship attitude among MBA, MCA and M.P.Ed students.

Keywords: *Entrepreneurship, MBA, MCA and M.P.Ed*

Introduction

Entrepreneurship has emerged as a critical engine of economic development, innovation and job creation. In recent years, there has been an increasing interest in understanding college students' views and tendencies towards entrepreneurship. Entrepreneurship interest arises from the realization that college is a critical stage in a student's life, where attitudes and views are formed and career trajectories are typically established. Entrepreneurial mentality covers a variety of characteristics, including a proclivity for risk-taking, inventiveness, resilience, and a willingness to embrace chances. Exploring the entrepreneurial mindset of college students can thus give useful insights on the potential for future entrepreneurial activity, as well as the larger influence on society and the

economy. (https://www.google.com/)

Entrepreneurship is the process of developing, organizing, and running a new business to generate profit while taking on financial risk. Entrepreneurship is the creation or extraction of economic valuable. Entrepreneurship is viewed as change, generally risk beyond what is normally encountered in starting a business, which may include other values than simply economic ones.

The term sport entrepreneurship has several different meanings. Sport entrepreneurship might be used to describe an innovative strategy taken by a sports organization or individual. Another use is the use of business methods to alter the way individuals and sports-related ventures work. Sports organizations may become more entrepreneurial by focusing more on commercial operations including marketing, advertising, publicity, sponsorships, and branding. Senne (2016) emphasized that sports organizations frequently have a complicated stakeholder environment since different groups or persons with whom the organization interacts have varied requirements and desires. Sporting organizations are involved in a wide range of social, communal, educational, economic, and research activities. Sports entrepreneurs have various leadership qualities, such as credibility and the capacity to develop dedication or excitement for a commercial endeavor. Sport entrepreneurship must be conceptualized in light of the changing global environment as well as the particular qualities of sports organizations that distinguish them from other types of organizations. (Smagina, 2016).

The term ‘entrepreneur’ has a variety of traits and characteristics depending on the situation or context. However, researchers in entrepreneurship have difficulty in narrowly defining these traits and characteristics (Mitchelmore & Rowley, 2010). Different types of sport entrepreneurs with a variety of traits and characteristics that influence their personality in building new venture capital. In most entrepreneurial business venture settings, the focus is on the individual (Acimovic, Spirtovic, Jonic & Projevic, 2013).

Entrepreneurship, which is frequently viewed as the driving force behind innovation and economic progress, is a complicated phenomenon driven by a variety of factors, including educational backgrounds and personal preferences. This study looks at the attitudes towards entrepreneurship of three different types of students: MBA (Master of Business Administration), MCA (Master of Computer Applications), and M.P.Ed (Master of Physical Education). Each of these academic areas offers distinct abilities and views that might greatly influence an individual's proclivity towards entrepreneurship. MCA students bring technical expertise and creativity to the table, but MBA students often have great business acumen and leadership qualities. M.P.Ed students, on the other hand, with their experience in physical education and a love for health and fitness, may approach entrepreneurial prospects from a different perspective.

This study will look at the different aspects that impact of University students' views towards entrepreneurship, including education, cultural background, personal experiences, and the perception of entrepreneurship as a realistic career option. Educators, politicians, and stakeholders may devise methods to encourage a more entrepreneurial spirit among University students, eventually contributing to the growth and vitality of the entrepreneurial ecosystem, by getting a greater knowledge of these characteristics.

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Statement of the Problem

The aim of the current study was to analysis the entrepreneurship attitude of MBA, MCA and M.P.Ed students.

Methodology

The current study includes 150 (MBA, MCA and M.P.Ed, 50 from Each Group) students chosen as a subjects. The subject were selected from Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India. Purposive sampling was used to collect the data. The subject age ranged between 21 to 25 years old. Obtained data on the specified variables were subjected to an independent "t" test at a significance level of 0.05.

Tool used

Entrepreneurial self-assessment Questionnaire developed by M.Inmaculada lopez nuenez, (2022).

Analysis and Interpretation of Data

The Entrepreneurial self-assessment Questionnaire among MBA, MCA and M.P.Ed students from Manonmaniam Sundaranar University was computed below Table 1 & 2.

Table I

Entrepreneurship attitude between UNIVERSITY Students

Table 1 presents the results of the univariate ANOVA tests on Entrepreneurship attitude of MBA, MCA and M.P.Ed students.

Mean ± Standard Deviation			Source of Variance	Sum of Square	Df	Means Square	F-ratio
MBA	MCA	M.P.Ed					
69.40 ± *8.672*	66.28 ± *8.026*	61.86 ± *8.892*	Between Groups	1435.37	2	717.687	10.197*
			Within Groups	10346.10	147	70.382	

(Note=* Significant at 0.05 level. The table value required at .05 level with df 2 147 is3.09)

The obtained F-ratio value is 10.197*, which is higher than the table value of 3.09 with df 2 and 147 required for significance at .05 level. Since the obtained value of F-ratio is higher than the table value, it indicates that there was significant difference exist among the mean values of MBA, MCA and M.P.Ed. The Scheffe's post-hoc test was used to determine which of the three paired means differed significantly, and the findings are shown in Table 2.

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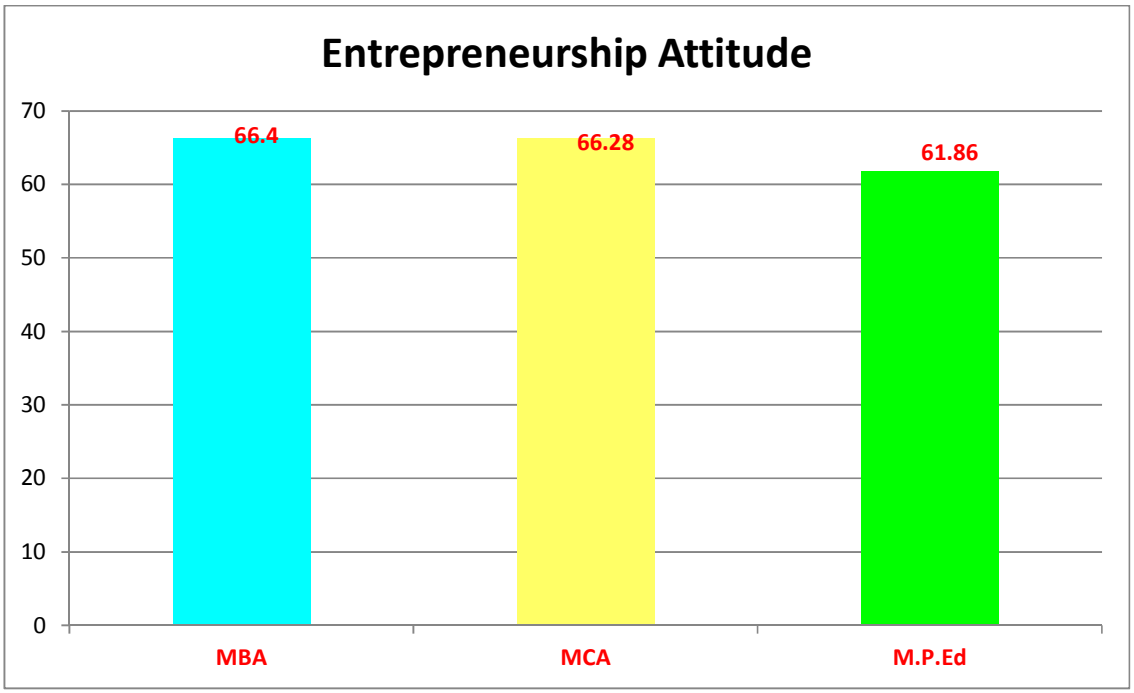

Figure 1: Mean Value of Entrepreneurship Attitude between MBA, MCA and M.P.Ed Students.

Table II

Table II: scheffe's test for the differences between the paired means on Entrepreneurship

Mean Values			Mean Difference	Sig	Confidence Interval
MBA	MCA	M.P.Ed			
69.40	66.28	-	3.120	.181	
69.40	-	61.86	7.540*	.000	4.17
-	66.28	61.86	4.420*	.034	

Note=*The mean difference is significant at the 0.05 level)

Above table shows that the paired mean differences on Entrepreneurship between MBA, MCA and M.P.Ed students are 3.120, 7.540* and 4.420* which are higher than the confidential interval at .05 level of significance. It shows that there was a significant difference among all the three paired means on Entrepreneurship.

Further it was concluded from the results of the study that the MBA and MCA students have more Entrepreneurship attitude than M.P.Ed students.

Discussion on findings

The result of the study indicates that MBA & MCA students have more Entrepreneurship attitude when compare with M.P.Ed students of Manonmaniam Sundaranar University. The analyzed data indicates that calculated significant value is respectively .181 & .034 is greater than tabulated value 0.05 level. Similar study conducted by Rafikbahi A. Umatiya (2013) findings also support that significant difference found between arts and science M.Ed. students in their attitude towards entrepreneurship.

The result of the study indicates that there were insignificant differences exist between MBA & MCA students of Manonmaniam Sundaranar University on Entrepreneurship attitude. The analyzed data indicates that calculated Significant value is .000 is lesser than tabulated value 0.05 level. Similar study conducted by Singh (2015) concluded that there was no significant difference found between male and female college students on Entrepreneurship attitude.

Conclusions

On the basis of findings of the study following conclusions have been made –

There is a statistically significant difference in the mean scores of MBA, MCA, and M.P.Ed students of Manonmaniam Sundaranar University entrepreneurship attitude.

There MBA & MCA students have more Entrepreneurship attitude when compare with M.P.Ed students of Manonmaniam Sundaranar University.

There have an insignificant difference between MBA & MCA students of Manonmaniam Sundaranar University on Entrepreneurship attitude.

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CONTENT VALIDATION OF DYNAMIC THROW LAYOUT FOR THROWING ACCURACY TEST IN CRICKET

***Akash Shukla **Dr Deepak Kumar Dogra**

**Research Scholar, Department of Physical Education, Banaras Hindu University, Varanasi* U.P (India), E-mail: akashshukla7275700@gmail.com
***Assistant Professor, Department of Physical Education, Banaras Hindu University, Varanasi* U.P (India), E-mail: dr.dkdogra74@gmail.com

ABSTRACT

Purpose: *In order to assess the throwing accuracy, this study was conducted to validate a dynamic throwing layout for an objective assessment of throwing accuracy from different fielding positions from 30 yard circle of cricket field.* ***Methodology:*** *A total 10 BCCI level 2 cricket coaches were approached for the content validation of mentioned fielding positions of dynamic throw layout. The opinion of the experts were measured as rating of relevance i.e. 1= not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = highly relevant for each testing positions respectively.* ***Result:*** *Every panellists rated all the identified fielding positions (items) to be essential for the construct of dynamic throwing accuracy as Content validity ratio was ranged from 0.4 to 1 for all testing position.* ***Conclusion:*** *On the basis of the results and findings it was concluded that all the identified fielding positions are very much relevant for dynamic throw layout and are accepted for the construction of dynamic throwing accuracy test in cricket.*

Keywords: Dynamic Throwing, Content Validity, Content Validity Index (CVI), Content Validity Ratio (CVR)

INTRODUCTION

Testing is one of the most widely utilised evaluation tools in all kind of education. Further, the tests are more than just an instruments and they may also be understood as established practises that can thoroughly measure a sample of behaviour by testing a series of problems (Linn, 2008). In fact, the tests are drafted to assess the quality, aptitude, skill, or knowledge of testee to a predetermined standard, which is typically regarded as acceptable or not (Dickson et. al. (2020). Moreover, the tests are the tools which used in educational practise to ascertain a student's capacity to carry out specific tasks, show mastery of a skill, or exhibit content understanding (Tritschler, 2000). But, Braun et. al. (2006) and (Manichander, 2016) described testing as a form of assessment tool of measuring single or multiple concepts, under a set of predetermined conditions.

Over the past few decades, many skill tests have been constructed in every sports like football, basketball, hockey, badminton, tennis and even in athletics to assess the various skill and the playing ability of the players for better results (Bhat, 2017). Alongside with this, cricket is growing very rapidly in this current era. Further, test, one day, and T-20 are the three formats of cricket that are played at the highest level internationally using their three primary game elements i.e. batting, bowling and fielding (Petersen, 2010).

Furthermore, Murtaza et al. (2014) mentioned that, it is really unfortunate for cricketing fraternity as there are lack of standardised skill tests in the game to evaluate players' cricket playing abilities. Although, not many skill tests have been created to assess cricketing abilities and skills. But, several individual tests designed by coaches have been used to evaluate the ability to play the game, though these tests extensively vary

in their content and design. Additionally, this situation arises due to diverse perspectives and ideas of the coaches on the key and crucial components of the game. Therefore, a player's ability is typically assessed by comparing it with that of other players in the place of objective evaluation (Stretch, 1984).

As, there are very less standardized procedure is available for quantitative measurement of the skills of cricket players. To address this issue the researcher want to validate a dynamic throwing layout for an objective assessment of throwing accuracy from different fielding positions from 30 yard circle of cricket field.

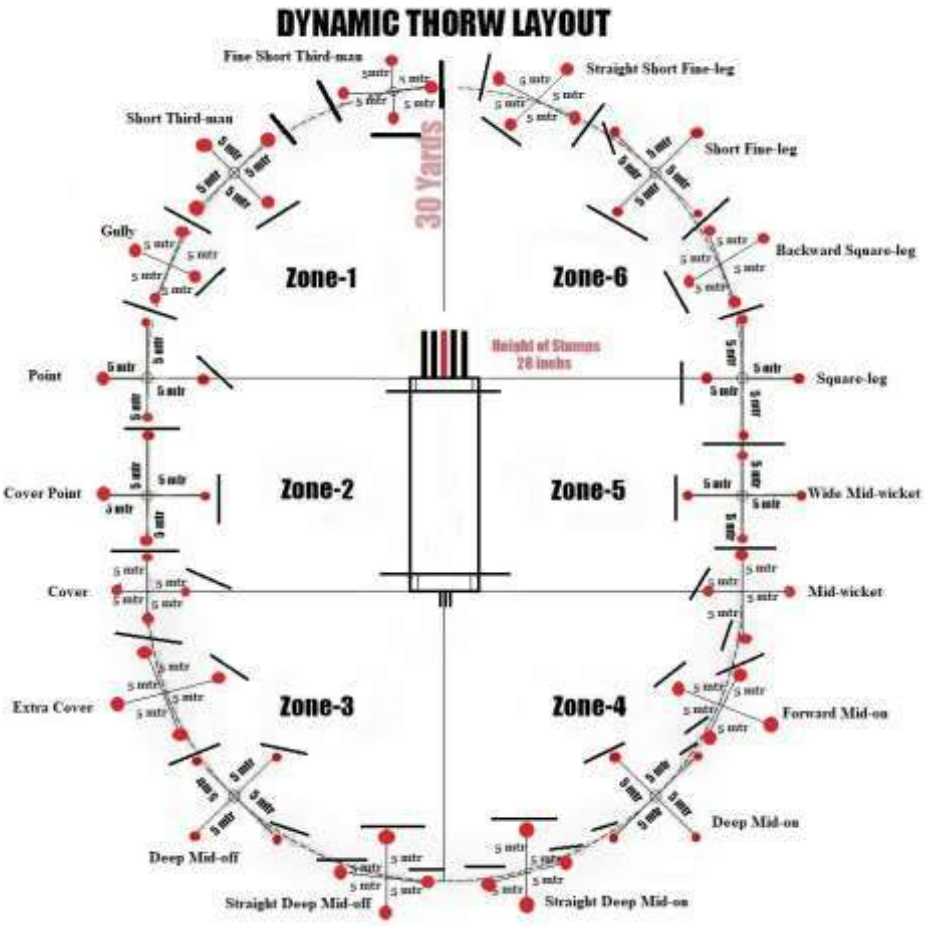
PURPOSE

The purpose of the study was to validate a dynamic throwing layout by the field experts for an objective assessment of throwing accuracy from different fielding positions of 30 yard circle in cricket field.

METHODOLOGY

The identified fielding positions in six zones of dynamic throwing layout was validated by content validity. Further, the content validation of each zone of the layout was done by the panel of experts. Furthermore, the experts were asked to rate each zone of the layout on the basis of its relevance to the underlying construct. A 4-point scale was used to avoid a neutral point. The four points used along the item rating continuum were 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, 4 = highly relevant.

PROPOSED LAYOUT



MARKING OF THE LAYOUT

The dynamic throw setting was designed as per the 30 yard circle of cricket field. The 30 yard circle were marked in different zones like zone-1, zone-2, zone-3, zone-4, zone-5, and zone-6. The selected fielding positions are gully, short third man, and fine short third man (zone-1), point, cover point and cover (zone-2), extra cover, deep mid-off, and straight deep mid-off (zone-3), straight deep mid-on, deep mid-on, forward mid-on (zone-4), mid-wicket, wide mid-wicket, square-leg (zone-5) and backward square-leg, short fine-leg and straight fine-leg (zone-6) respectively.

SELECTION OF EXPERTS FOR FACE VALIDATION OF LAYOUT

Total 10 BCCI level 2 cricket coaches were approached for the content validation of identified fielding positions of each zone.

Table 1.0. Ratings on a 4-Item Scale for the Dimension of Dynamic Throw Layout by Ten Experts: Items Rated 3 or 4 on a 4-Point Relevant Scale

Testing	Experts	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	No. in agreement	I-CVI	Pc	Kappa statistic (K)
	Items														
Zone 1	Gully	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Short Third Man	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Fine Short Third Man	3	3	2	4	2	3	4	3	3	3	**08**	**0.8**	0.00244	0.79
Zone-2	Point	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Cover Point	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Covers	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
Zone-3	Extra Cover	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Deep Mid-off	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Straight Deep Mid-off	3	3	2	4	2	3	4	3	2	3	**07**	**0.7**	0.00419	0.69
Zone-4	Straight Deep Mid-on	3	3	2	4	2	3	4	3	2	3	**07**	**0.7**	0.00419	0.69
	Deep Mid-on	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Forward Mid-on	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
Zone-5	Mid-Wicket	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Wide Mid- Wicket	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Square Leg	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
Zone-6	Backward Square Leg	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Short Fine Leg	4	4	4	4	4	4	4	4	4	4	**10**	**1**	0.00098	0.99
	Straight Short Fine Leg	3	3	2	4	2	3	4	3	3	3	**08**	**0.8**	0.00244	0.79

*I-CVI= No. of expert who rated essential/Total no. of expert, Pc= [N/ A (N – A)] × 0.5*N (where N = number of experts in the panel, A = number of experts in the panel who agree that the item is relevant), K = (I-CVI – Pc) / (1 – Pc)

*(Polit & Beck, 2006; Zamanzadeh et al., 2014)

Table 1.0 Exhibits the rating of relevance (i.e. 2 = somewhat relevant, 3 = quite relevant, and 4 = highly relevant) for each testing positions by 10 different experts in all six zones respectively. Further, table also shows the zone wise No. of agreement of the experts. Furthermore, all the experts were agree (i.e. No. Of agreement= 10) for Gully, Short Third Man, point, cover point, covers, extra covers, deep mid-off, deep mid-on, forward mid-on, mid-wicket, wide mid-wicket, square-leg, backward square-leg, and short fine leg positions in zone1, zone2, zone3, zone4, zone5, and zone6 respectively. Furthermore, 8 experts were agree (i.e. No. Of agreement= 08) for Straight Short Third Man and Straight Short Fine Leg positions in zone1 and zone6 respectively. Moreover, 7 experts were agree (i.e. No. Of agreement= 07) for Straight Deep Mid-off and Straight Deep Mid-on positions in zone3 and zone4 respectively. Additionally, table also reveals the item content validity index value (I-CVI=1) for Gully, Short Third Man, point, cover point, covers, extra covers, deep mid-off, deep mid-on, forward mid-on, mid-wicket, wide mid-wicket, square-leg, backward square-leg, and short fine leg in zone1, zone2, zone3, zone4, zone5, and zone6 respectively. Similarly, I-CVI value (0.8) for Straight Short Third Man and Straight Short Fine Leg in zone1 and zone6 respectively. Alongside with, I-CVI value (0.7) for Straight Deep Mid-off and Straight Deep Mid-on in zone3 and zone4 respectively. Apart from this, table 1.0 also reveals the probability of chance agreement value (Pc=0.00098) for Gully, Short Third Man, point, cover point, covers, extra covers, deep mid-off, deep mid-on, forward mid-on, mid-wicket, wide mid-wicket, square-leg, backward square-leg, and short fine leg in zone1, zone2, zone3, zone4, zone5, and zone6 respectively. Similarly, Pc value (0.00244) for Straight Short Third Man and Straight Short Fine Leg in zone1 and zone6 respectively. Alongside with, Pc value (0.00419) for Straight Deep Mid-off and Straight Deep Mid-on in zone3 and zone4 respectively. In addition, table 1.0 also reveals the

value of Kappa statistic (0.99) for Gully, Short Third Man, point, cover point, covers, extra covers, deep mid-off, deep mid-on, forward mid-on, mid-wicket, wide mid-wicket, square-leg, backward square-leg, and short fine leg in zone1, zone2, zone3, zone4, zone5, and zone6 respectively. Similarly, Kappa statistic value (0.79) for Straight Short Third Man and Straight Short Fine Leg in zone1 and zone6 respectively. Alongside with, Kappa statistic value (0.69) for Straight Deep Mid-off and Straight Deep Mid-on in zone3 and zone4 respectively.

Table 1.1. CVR, S-CVI (Average) and S-CVI (Over All) for Items of each Dimension

Testing Zone	Testing Positions	CVR	S-CVI (Average)	S-CVI (Over All)
Zone-1	Gully	1	0.93	0.94
	Short Third Man	1		
	Straight Short Third Man	0.6		
Zone-2	Point	1	1.00	
	Cover Point	1		
	Covers	1		
Zone-3	Extra Cover	1	0.90	
	Deep Mid-off	1		
	Straight Deep Mid-off	0.4		
Zone-4	Straight Deep Mid-on	0.4	0.90	
	Deep Mid-on	1		
	Forward Mid-on	1		
Zone-5	Mid-Wicket	1	1.00	
	Wide Mid- Wicket	1		
	Square Leg	1		
Zone-6	Backward Square Leg	1	0.93	
	Short Fine Leg	1		
	Straight Short Fine Leg	0.6		

*Ne= No. of Experts Who Rate an Item as “Essential.”, CVR= (Ne-N/2) / (N/2), S-CVI (Avg.) = Sum of CVI in a Factor /No. of Items in a Factor, CVI (overall) = Sum of S-CVI (Avg.)/ Total no. of factors
*(Lynn, 1986; Polit & Beck, 2006; Rubio et. al., 2003)

Table 1.1 exhibits the content validity ratio (CVR= 1) for Gully, Short Third Man, point, cover point, covers, extra covers, deep mid-off, deep mid-on, forward mid-on, mid-wicket, wide mid-wicket, square-leg, backward square-leg, and short fine leg in zone1,

zone-2, zone-3, zone-4, zone-5, and zone-6 respectively. Similarly, CVR value (0.6) for Straight Short Third Man and Straight Short Fine Leg in zone-1 and zone-6 respectively. Alongside with, CVR value (0.4) for Straight Deep Mid-off and Straight Deep Mid-on in zone-3 and zone-4 respectively. Further, table also reveals scale content validity index (S-CVI Average = 0.93) for zone-1 and zone-6, (S-CVI Average = 1.00) for zone-2 and zone-5 and (S-CVI Average = 0.90) for zone-3 and zone-4. Furthermore, table 1.1 also shows the overall scale content validity index (S-CVI Average = 0.94) for overall dynamic throw layout.

DISCUSSION OF FINDINGS

This study was conducted to validate the dynamic throwing layout by the field experts for an objective assessment of throwing accuracy in cricket. The statistics of table-1.0 exhibited the I-CVI of all the testing positions (items) of six zones are ranged from 0.70 to 1. Therefore, no item (fielding position) need be remove or revise because of high I-CVI value (≥0.70) for each position. Further, Kappa statistic shows excellent response of the experts for each testing position as K value ranged from 0.69 to 0.99 (Polit and Beck, 2006; Zamanzadeh et al., 2014). Furthermore, The S-CVI (Average) for all the dimension of dynamic throwing accuracy was 0.93 (Zone-1), 1.00 (Zone-2), 0.90 (Zone-3), 0.90 (Zone-4), 1.00 (Zone-5) and 0.93 (Zone-6) respectively from table 1.1. Moreover, the overall S-CVI for the 18-item scale (testing positions) was 0.94 which indicated high content validity of the items for the construct of dynamic throwing accuracy (Table 1.1). Additionally, CVR ranged from 0.4 to 1 for all testing position (items) on the scale indicating that all most every panellists rated these items to be essential for the construct of dynamic throwing accuracy (Table 1.1). This high content validity index value was recorded due to the fact that all the fielding positions of 30 yard circle are very essential for restricting runs and dismissing the batsmen (Cook

and Strike, 2000 and MacDonald et al., 2013). Further, due large and unfixed dimension cricket field fielding positions have been categorised into three categories i.e. close-in field, inner-circle and outer-circle field. Furthermore, in cricket every players bat and field, while only some players bowl and one person keeps wicket. Dismissing a batsman can be achieved in different ways, some specific to fielders; hence, catching and throwing are vital skills. Common requirements for these skills are speed and accuracy (Freeston and Ferdinands, 2007). As well as dismissing batsmen, the role of elders includes saving runs, particularly in the shorter formats of the game. Therefore, optimising the movements and skills required to successfully field can have an important influence on the game. That's all the 10 experts accepts all the fielding position in the presented dynamic throwing accuracy layout.

CONCLUSION

The findings of this study revealed quantification of content validity on the basis of CVI (I-CVI & S-CVI), Kappa coefficient, and CVR indicated high content validity for the items (testing positions). Further, on the basis of the results and finding of the study it was concluded that all the identified fielding positions are very much relevant for dynamic throw layout and were accepted by field experts for the construction of dynamic throwing accuracy test in cricket.

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